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CENTRAL AREA TRANSPORTATION ISSUES

PROPERTY OF CITY OF TORONTO

PREPARED BY: THE TRANSPORTATION DIVISION
METROPOLITAN TORONTO PLANNING DEPARTMENT

METROPOLITAN PLAN REVIEW

The Municipality of Metropolitan Toronto

RESOURCE CENTRE

METROPOLITAN PLAN REVIEW

REPORT NO 6

CENTRAL AREA TRANSPORTATION ISSUES

A background document in the review of
"The Official Plan for the Urban Structure: Metropolitan Toronto"

Prepared by the Transportation Division
of the Metropolitan Toronto Planning Department
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PREFACE

The Official Plan for the Municipality of Metropolitan Toronto, entitled "Official Plan For the Urban Structure: Metropolitan Toronto", was adopted and largely approved in 1980. The Plan applies to the Metropolitan Planning Area comprised of the Cities of Toronto, Etobicoke, York, North York and Scarborough and the Borough of East York.

In March 1986, the Metropolitan Council approved a program to review the Plan. That program has been published as "Report No. 1: Program", (April 1986, Metropolitan Toronto Planning Department) and copies are available from the Department.

The Metropolitan Plan Review will proceed by studying five major subject areas, namely:

- regional assumptions and the concept;
- housing and residential development;
- employment areas and activities;
- transportation; and
- open space and environment.

Phase 1 of the review process, of which this study is a component, is the preparation and publication of a series of technical background and proposal papers covering the above five subject areas. Community response to those papers is an integral part of the Metropolitan Plan Review and is encouraged from all sectors and levels and levels of the community. All responses will be considered in any subsequent policy reports recommending revision to existing policy.

Central Area Transportation Issues is a technical background report which is the first of a series of reports studying the subject area "transportation" in the Metropolitan Toronto Planning Area.

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CENTRAL AREA TRANSPORTATION ISSUES

EXECUTIVE SUMMARY

1.0 INTRODUCTION

The Official Plan for the Urban Structure of Metropolitan Toronto (hereinafter referred to as the "Official Plan") states that its fundamental aim is to achieve a multi-centred urban structure through the development of Metropolitan Centres located along rapid transit facilities. The Official Plan also states that the Central Area of the City of Toronto (see Exhibit 1) will remain the pre-eminent business, cultural, governmental, recreational and management centre of the Metropolitan Region. To that end the Official Plan says that Council shall support: improvements to the quality of rapid transit service, but not support new rapid transit lines into the Central Area; improvements to surface transit to and within the Central Area; limited capacity increases to commuter rail service; and necessary improvements for traffic circulation within the Central Area.

Since 1983, a number of major improvements have been proposed for the transportation system serving the Central Area. These proposals have raised debate as to their consistency with the intent, if not the letter of the Metropolitan Official Plan. Additionally, there has been some uncertainty as to the timing of the identified improvements and whether they would be required within the life of the Plan. This background paper to the Official Plan review addresses the following key elements:

- Central Area Employment;
- Changing Population and Labour Force Patterns;
- Employment/Transportation Usage Relationships;
- Transportation Capacity Deficiencies; and
- Implications for the Official Plan Concept.

2.0 EMPLOYMENT

Current employment (1987) in the Central Area is 405,500. Previous projections for Central Area employment for the year 2001 ranged between 440,000 and 443,000, while the current Metropolitan Toronto Planning Department projections are 448,000 for 2001 and 473,600 for 2011 (Exhibit 2 of the main report). Between 1970 and 1986, the type and distribution of Central Area employment has changed dramatically:

- o office employment, much of it concentrated around subway stations, has increased substantially, while industrial employment has declined steadily;

- o most employment growth has been centred on the Yonge/University subway lines, although future growth is expected south of Front Street;

- o the number of part-time workers is increasing in both absolute and percentage terms; however, because the number of part-time workers is small compared to the number of full-time workers and part-time workers have less tendency to travel during peak hours, the overall transportation impact of the increase in part-time workers is not expected to be substantial.

3.0 CHANGING POPULATION AND LABOUR FORCE PATTERNS

Metropolitan Toronto's population increased between 1971 and 1986 by 103,000. Population is expected to increase between 1986 and 2011 by only 1,200. However, within Metropolitan Toronto there has been, and are forecast to be, growth and declines within the six area municipalities. Between 1971 and 1986 the City of Toronto population declined by 100,500 while the Cities of North York and Scarborough grew by 55,100 and 146,700, respectively. Between 1986 and 2011 only the Cities of Toronto and Scarborough are forecast to have population increases (17,000 and 3,800 respectively); all other municipalities are forecast to have population declines. It should be

noted however, that within the City of Toronto, the Central Area population is forecast to grow by 56,500.

In the Regional Municipalities around Metropolitan Toronto, population between 1971 and 1986 grew by approximately 709,800 compared to Metro's overall growth of only 103,000. The Region's population is forecast to increase by 935,000 between 1986 and 2011 compared to Metro's overall expected growth of 1,200. With continued employment growth expected in Metropolitan Toronto and particularly the Central Area, these forecasts imply continued growth in inbound inter-regional commuting. However, if measures were undertaken to intensify housing within Metropolitan Toronto resulting in greater increases in population and, more importantly, the labour force, these forecasted increases in inter-regional commuting could be reduced.

4.0 TRANSPORTATION DEMAND

A.M. peak period (7:00 to 9:00 a.m.) travel into the Central Area has increased by about 14% between 1970 and 1985. During this period, surface transit ridership has declined, subway ridership grew to 1981 and has declined slightly since then and GO Rail ridership has increased steadily. These changes in travel patterns reflect the changing regional distribution of population and labour force. The road system is operating essentially at capacity in the peak periods, while some residual capacity exists on the surface transit, subway and GO Rail services. Regarding the latter, there is some question whether the full capacity can be utilized, given the limited flexibility and attractiveness of 'peak period only' GO services on all but the Lakeshore lines. However, based on current office space absorption rates, there would appear to be residual transit capacity for a minimum of 6-10 years of continued growth.

Trip distribution data from the 1971 and 1981 Census also reflects changes in population and labour force, with a growing number and percentage of Central Area commuters originating from outside Metropolitan

Toronto (from 18,700 (7%) in 1971 to 48,500 (13.8%) in 1981). Figures from the 1986 Census, while not currently available, are expected to confirm this trend. The Planning Department's latest demographic and travel forecasts indicate that this trend is expected to continue, with the following results expected by 2011:

1. short-distance work trips, which would have a high walk-to-work component and a high transit modal split (for both surface and short-distance rapid transit travel) are expected to increase from 36,000 (10.2%) in 1981 to 54,000 (14.5%) in 2011;

2. medium distance work trips from within Metro, which tend to be oriented to the subway and arterial road systems (and, in the case of the City of Toronto, to the east-west streetcar system), are expected to decrease by 13,500 between 1981 and 2011, to a large extent offsetting the growth in short distance trips referenced in 1 above. (Recent announcements with regards to additional residential developments east of the downtown area may help reduce the anticipated decrease); and

3. long distance work trips (from beyond Metropolitan Toronto), which generally use the commuter rail and expressway systems, are expected to increase from 48,500 (13.8%) in 1981 to 86,800 (23.5%) in 2011.

Traditionally, for area-wide studies and reviews of development applications, estimates of future Central Area travel demand have been based on projected office floor space construction, factored by occupancy rate, floor space per worker, attendance rate, peaking factors and modal split. Generally, there is good statistical data on both office space construction and the various transportation demand factors, however, there is often a poor understanding of the causal relationships which shape those factors and of the impact that changes in those factors have on the trip generation associated with the existing stock of office space. As a result an incremental approach to reviewing Central Area development, which uses traditional assumptions with respect to trip generation factors to calculate

additional trips to add to existing levels of travel demand, tends to result in an over estimation of total peak hour trips. Therefore, there is an increasing need for enhanced capabilities to examine the impacts of changing travel demand patterns and increased development in the Central Area. In this regard, Metropolitan and Toronto Transit Commission staff in cooperation with City of Toronto staff propose to develop a detailed Central Area travel demand model to assist in the examination of Central Area transportation issues. Up-to-date data from the Central Area Monitoring Program will be utilized by City and Metropolitan staff to examine the causal relationships and refine assumptions with respect to Central Area trip generation.

5.0 CURRENT TRANSPORTATION PROPOSALS

Over the past few years, a number of major transportation improvements have been proposed which may affect the capacity of the transportation system serving the Central Area. The improvements include:

- Front Street interchange/Gardiner Expressway widening;
- Leslie Street Extension/Bayview Avenue widening;
- Extension of Dufferin Street to Lake Shore Boulevard and the jog elimination at Queen Street;
- Harbourfront LRT;
- Spadina LRT;
- Downtown Rapid Transit Line;
- GO Rail expansion;
- GO/TTC fare integration and service coordination;
- Bloor-Yonge Subway station improvements;
- Yonge Subway service frequency increases; and
- Various local improvements.

More recently, to alleviate existing congestion along Eglinton Avenue near the Allen Road and on Dufferin and Bathurst Streets south of Eglinton Avenue, the Northwest Metro Transportation Study had proposed an environmental and feasibility study to examine alternative improvements, including a southerly extension of the Allen Road. This study, however, was not approved by Metropolitan Council.

6.0 POLICY ISSUES

A number of key policy issues have been identified in this review. Employment growth appears to be at a faster rate than originally anticipated, with the possibility that two-hour peak period transportation capacity may be exceeded within the life of the Official Plan, if additional improvements are not implemented. The implications of this trend are increasing congestion, delays and frustration to motorists and transit users as peak period conditions extend over a longer time. The trend in population, labour force and, therefore, trip distribution implies an increasing reliance on GO Rail services, the provision of which is largely beyond the control of Metropolitan Toronto and which raises larger issues of overall development patterns in the Greater Toronto Area. From an ideal planning perspective, two policy choices appear to be available regarding overall regional development:

(i) accommodation of existing trends and forecasts, which imply increased commuting from the adjacent Regions and an increasing reliance on both GO Rail and the expressway system to serve the growth in inter-regional commuting; or

(ii) restrict Central Area development consistent with the existing capacity of the transportation network.

The achievement of either of these policy choices is not likely because, (i) apart from the proposed Gardiner Expressway widening, expansion of the expressway system serving the Central Area does not appear to be achievable in the foreseeable future; and (ii) restricting Central Area development is not practical given current market pressures and the amount of additional office space that can be developed under the existing City of Toronto Official Plan. Therefore, recognizing that it is unrealistic to pursue either of the above extreme policy choices, a middle course of action should be supported that strengthens the existing policies of Metropolitan Toronto. These policies attempt to modify the existing trends by increasing the level of intra-regional commuting (i.e. within Metropolitan Toronto) through continued support and promotion of suburban centres as areas of alternative office

employment growth. Therefore, the preferred direction with respect to the overall urban structure of Metropolitan Toronto and the Greater Toronto Area would see:

- o continued growth and development of the major suburban centres as areas of alternative employment opportunities through the provision of east-west rapid transit services;

- o continued growth of residential development within the Central Area to promote short distance work trips between jobs and residences in the Central Area;

- o intensification of housing within Metropolitan Toronto generally to take advantage of the existing transportation infrastructures;

- o the maximum use of the existing transportation infrastructure through the implementation of transportation system management measures and upgrading of the existing arterial road network; and

- o control of the expansion of GO commuter rail services to discourage urban sprawl and long distance work trips.

Regarding the timing of transportation improvements for the Central Area, a number of points are clear. Road improvements are limited and generally well advanced in the planning process. Based upon current trends, the Downtown Rapid Transit line does not appear to be a high priority at this time, but will be reconsidered as part of the first Network 2011 review. Some commitments have been made to GO Rail expansion, and further improvements are likely to be implemented over an extended period of time in response to demand. The nature and extent of these GO Rail improvements are critical to the overall direction of regional development. Metropolitan Toronto currently has only limited input into these improvements, the impacts of which can affect the patterns of growth both inside and outside Metro. Improvements within the Central Area, notably the

Harbourfront LRT and any new services which are developed during the Spadina Transit Study are intended to improve circulation and distribution within the Central Area but do not provide additional capacity to the Central Area. Finally, a number of traffic management measures have been identified and will be the subject of on-going joint studies with the City of Toronto.

Monitoring of Central Area development and transportation system usage will be critical in the future and, in fact, is prescribed by the Official Plan. The Central Area Monitoring Program was established by the Planning Department in 1986 and will continue to be revised and expanded as necessary.

7.0 SUGGESTED AMENDMENTS TO THE OFFICIAL PLAN

The Official Plan, although containing a range of specific and detailed provisions and prescriptions, is primarily a strategic instrument which outlines the broad policies to be pursued in defining the form and function of the Metropolitan Toronto urban structure. This paper is premised on the assumption that the current trends in office floor space absorption and employment growth do not justify the questioning of the basic strategy of the Official Plan regarding the Central Area, (i.e. to sustain its growth as the business, cultural, governmental, recreational and management centre of the Metropolitan Region, while promoting the continued development of alternative opportunities in major suburban centres). Consequently, no fundamental revision of the Plan is proposed at this time.

However, as noted earlier, the continuation of current population and labour force trends implies an increased reliance on the GO Transit commuter rail system. If these services are upgraded without recognition of the potential impact that these actions may have on overall regional development, the actions may only serve to reinforce the current trends. Official Plan transportation policies with respect to the Central Area must recognize this fact and be structured to promote office employment growth

in the major suburban centres and limit the extent and growth of the GO commuter rail system. **Therefore, it is suggested that:**

1. **the specific prohibition against new rapid transit serving the Central Area be retained in order to reinforce the policy direction of the Official Plan with respect to the continued development and growth of the suburban Metropolitan Centres;**

2. **Section 6.D.3 regarding GO Transit commuter rail facilities be revised to reflect existing facilities and the possibility of service upgrading, based on appropriate analysis and review. In recognition of the Plan's overall policy with respect to the urban structure for Metropolitan Toronto, Metropolitan Council should support GO commuter rail improvements that sustain but not promote growth in the Central Area. Therefore, improvements should be based on an incremental approach in response to demand and the length of each line over which improvements are to be made should be minimized so as not to encourage wide-spread urban sprawl and development of exclusively dormitory communities;**

3. **The specific Metropolitan role in analysis, review and approval of GO Transit plans and programs should be discussed with the Provincial authorities, and then strengthened and delineated in the Official Plan;**

The provisions of Section 6.C - System Development, coupled with the Provincial Environmental Assessment Act, provide for full analysis, public debate and political review of any new rapid transit facilities and provide adequate protection against precipitous implementation of new Central Area facilities. Nevertheless, in order to clarify Council's intent, **it is suggested that:**

4. **the provisions of Section 6.C of the Official Plan referring to the analyses to be conducted for system expansion be referenced in Section 6.B.2, which refers to transportation services to support employment growth in the Central Area;** and

5. **the incremental upgrading of existing services and facilities, and the introduction of low cost measures such as new surface services, transportation system management measures, etc. be emphasized (in addition to the implementation of the Front Street, Gardiner Expressway and Leslie Street/Bayview Avenue improvements and the Yonge subway headway reduction improvements) in improving Central Area transportation system performance.**

Other amendments to the plan are generally technical or facility related in nature and should proceed at this time. **It is therefore suggested that:**

6. **Appropriate amendments to Figure 8 - Road Network: 2011 and Figure 9 - Metropolitan Arterial Roads: Rights-of-Way be prepared to show the Front Street extension and Gardiner Expressway interchange, such proposed amendments to be brought forward when the environmental and feasibility studies for these facilities are considered.**

It has been noted that a variety of operational and system management initiatives are to be investigated, as currently prescribed by the Official Plan. Staff have recognized the need to work closely with City of Toronto staff to assess both the local and regional impacts of major development proposals now coming forward. The issues to be examined will include:

1. introduction of additional one-way streets in the Central Area, and their possible assumption by Metro;

2. temporal and spatial extension of peak-period parking prohibitions (some of these changes have already been made);

3. transit priority measures;

4. measures to increase vehicle occupancy, such as high occupancy vehicle lanes;

5. restriction of delivery vehicles to off-peak hours; and

6. possibility of developer contributions to transportation improvements, both for specific facilities and through a general development levy.

If, as a result of these studies amendments to the Official Plan are proposed, the specific amendments can be brought forward at that time.

While the need to undertake these studies may suggest that the shaded area on Figure No.9 of the Plan should be retained, the Central Area Traffic Management Study conducted jointly with the City of Toronto was explicitly undertaken to satisfy the "Location for Further Studies" note referenced on Figure No.9. It should be noted, however, that the only currently remaining outstanding road right-of-way issues are the widening of Jarvis Street between Lake Shore Boulevard and Queen Street and the widening of York Street south of Front Street, and proposed amendments for these road sections are forthcoming. To remove ambiguity with respect to road rights-of-way in the Central Area, the shaded area should be removed from the above Figure. Any further amendments can be brought forward in the future if it is determined that a specific road's right-of-way should be changed. **It is therefore suggested that:**

7. **both the shaded area and footnote headed "Locations Subject to Further Study" on Figure 9: Metropolitan Arterial Roads: Rights-of-Way be deleted.**

Finally, as noted previously, structural and distributional changes in Central Area employment are becoming increasingly important in assessing transportation implications, particularly with respect to residual system capacity. While these changes are now being monitored, there are currently no policies whereby the differential transportation impacts of specific development proposals can be addressed in the context of the Official Plan, particularly when increases in density are requested. Recognizing that the regional road system serving the Central Area is operating virtually at capacity, commercial developments that are strategically located close to the rapid transit system and which also provide for new residential

development have the least impact on the regional road network. Therefore policies should be developed that specifically indicate that the site's proximity to the rapid transit system is the most important criterion in assessing an application for extra commercial density in the Central Area and that Metropolitan Toronto would not support major commercial development located in areas not well served by the rapid transit system. For those applications well located with respect to the rapid transit system, Metropolitan support would be based on a number of additional criteria, which would include; the ability of the rapid transit system to accommodate the additional demand, the ability of the local road network to adequately serve the development and the concurrent provision of additional residential development within the Central Area. With such policies included in the Official Plan, Metro would have a better basis upon which to comment on and, if necessary, to sustain objections to major development proposals.

At this time it would appear that the current rate of office space absorption in the Central Area can be accommodated for 6-10 years depending upon the extent to which the residual capacity on the transit system can be utilized and whether increases in the "Floor Space per Worker" ratio are realized. Obviously a number of other factors can also influence this time frame and the Central Area Monitoring Program must be heavily relied upon with respect to identifying the need for any further actions to either increase capacity to the Central Area or control future development activity. Clearly, the lead time for such actions can be significant and it will be imperative that appropriate studies be initiated immediately should the monitoring program identify the emergence of major problems within a 3-5 year time frame.

It must also be recognized that, if the transportation improvements for the Central Area that are currently under study (Front Street extension, Gardiner widening and increased frequency on the Yonge Subway) are not approved for implementation, then consideration will have to be given to introducing additional controls on the rate and/or the amount of Central Area development, commensurate with the capacity of the transportation system. **It is therefore suggested that:**

8. in order to minimize the impacts of new development on the road system, a section in the Official Plan be included which clearly outlines that Metropolitan approval of major applications for extra commercial density in the Central Area will be based firstly on the proximity of the development to the rapid transit system, and secondly on various other criteria, including the ability of the rapid transit system to accommodate a high percentage of the additional travel demand, the ability of the local road network to serve the development and the concurrent provision of additional residential development within the Central Area; and

9. a section be included in the Official Plan which clearly states that future Metropolitan Council action with respect to additional transportation infrastructure to serve the Central Area or with respect to the level of development considered appropriate for the Central Area, will be largely based upon the results of the Central Area Monitoring Program.

1.0 INTRODUCTION

Since 1986, the Metropolitan Planning Department, as directed by Metropolitan Council, has been undertaking a comprehensive review of the Official Plan for the Urban Structure (hereinafter referred to as "The Official Plan"). This discussion paper is presented as background to that review and is intended to identify key issues related to the Central Area and the transportation system serving it which, in turn, may indicate the need for revision of certain sections of the Official Plan. The underlying premise of this paper is that the primary goal and fundamental aims of the Official Plan are valid and achievable, tempered by the recognition that environmental and economic changes since formulation of the Official Plan may dictate modification of certain definitive statements regarding the Central Area. It is not the purpose of this report to develop or propose specific Official Plan amendments. Areas of concern and possible approaches are identified and, after review, more detailed proposals will be developed in a second phase Policy Report.

This paper is one of several background studies being undertaken as part of the Official Plan Review. Two of these background papers will address Housing and Metropolitan Centres, respectively. Consequently, although these issues are key in any discussion of Central Area Transportation issues, they are not discussed at any length in this study; rather, the reader is referred to the specific papers for a more detailed analysis.

1.1 Key Statements in the Official Plan

The Central Area is the subject of numerous sections of the Official Plan ranging from the strategic to the operational.

Section 3.C: Concept for the Urban Structure-Centres, states:

1. A fundamental aim of the Plan is to create a multi-centred urban structure. This can be achieved through the development of Metropolitan Centres located along rapid transit facilities.

2. The Central Area of the City of Toronto will remain the pre-eminent business, cultural, governmental, recreational and management centre of Metropolitan Region as well as accommodating a strong and growing residential component. Its expected growth by 2001 can be accommodated without additional major transportation facilities.

Section 4.B: Centres - The Central Area, states:

1. The Central Area will remain the pre-eminent centre for the Metropolitan Region, serving as the dominant focus of urban activity. Consistent with its historical development, the Central Area will generally provide the highest order central place functions which serve the wider Metropolitan Region, thereby continuing as the primary location of government, corporate head offices, financial and other major institutions, retail trade and related activities, as well as continuing as the principal centre for communications, cultural and entertainment activities. Its estimated 1976 employment total of 390,000 persons will increase by approximately 58,000 persons to the year 2001. This is compatible with the capacity and level of transportation facilities described in Section 6.

2. For purposes of calculating population and employment, the outer limits of the Central Area are defined as shown on Figure 4. (See Exhibit 1.)

The concluding statements of both of these sections refer to the assumed adequacy of the existing (as of 1976) transportation system to serve projected increases in Central Area employment. Section 6.B: Transportation -Objectives, is more explicit:

2. To provide adequate transportation services to support the employment growth of the Central Area as noted in Section 4, Council shall support:

a. improvements to the quality of service on the subway lines, but shall not support construction of additional rapid transit lines into the Central Area;

b. the necessary improvements of surface transit to and within the Central Area;

c. limited capacity increases to commuter rail service; and,

d. necessary improvements to the efficiency of traffic and pedestrian circulation within the Central Area.

Section 6.D: Transportation - Transit, expands further on commuter rail facilities:

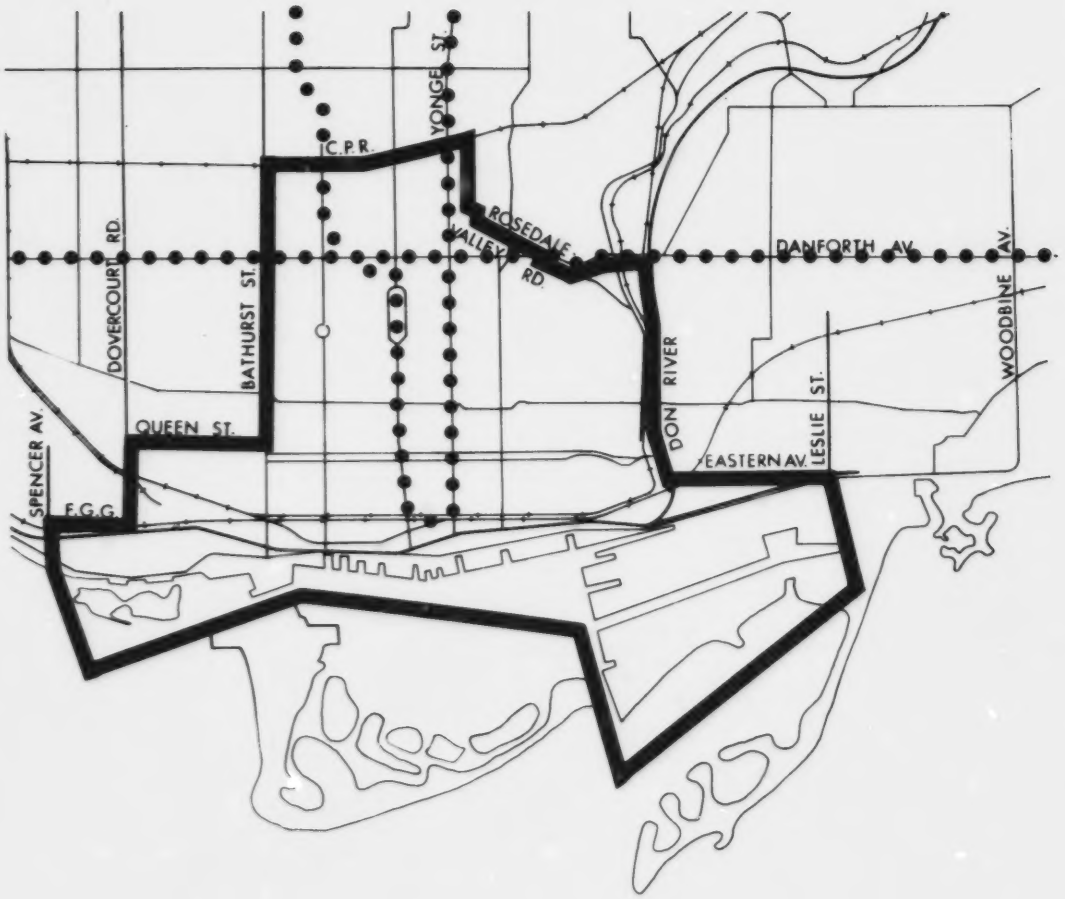
3. The Corporation shall co-operate with Provincial authorities in the preparation of policies and programs for the development and expansion of the GO Transit commuter rail and bus system in accordance with the following provisions:

a. GO Transit rail services shall be limited to those lines shown on Figure 7, "Major Transportation Facilities";

b. moderate increases in the capacity of the Lakeshore and Georgetown GO Transit rail services shall be supported to the extent compatible with the Plan; and,

c. the Richmond Hill and Streetsville GO Transit rail service should be limited in their capacity, in support of the land use strategies of the Plan.

The intention of the Official Plan with respect to Central Area transportation improvements is clear: no new rapid transit, surface



CENTRAL AREA BOUNDARY

EXISTING RAPID TRANSIT LINES

EXHIBIT 1 : CITY OF TORONTO, CENTAL AREA

transit improvements as required, modest capacity increases on the GO Rail system. The underlying assumption is also clear: Central Area employment (the key determinant of peak period transportation capacity needs) was expected to grow to approximately 440,000 by 2001, an increase of 52,000 on an assumed 1976 base of about 388,000. Obviously, any review of the Official Plan must include a review of the validity of the assumptions on which it is based.

1.2 Need for Review

Since 1983, a number of studies have identified various required improvements to the regional transportation system serving the Central Area:

- The Central Waterfront Transportation Study (1983) identified a number of required transportation improvements, including: the need to widen the Gardiner Expressway to four lanes in each direction, between the Humber River and a new interchange to an extended Front Street in the vicinity of Strachan Avenue; the Harbourfront-Spadina L.R.T. line from Union Station to the Bloor subway; and, a radial 'relief'/Waterfront line;

- The Don Valley Corridor Transportation Study (1983) proposed construction of the Leslie Street extension and widening of the Bayview extension, along with improved connections to Front Street;

- The Downtown Rapid Transit Study (1984) and the Network 2011 Study (1985) both concluded that a new radial rapid transit line linking the Central Area (Union Station) with the Danforth subway would be required by the late 1990's. In the interim, substantial increases in radial GO Rail capacity were proposed.

With all of these proposals there has been a debate as to their consistency with the intent, if not the letter, of the Official Plan. Additionally, there has been some uncertainty as to the timing of the identified improvements, specifically whether need would be shown during the period or term covered by the Official Plan. The latter point is particularly important given the statutory requirements for project approval and the long lead times to implementation. Nevertheless, these proposals would require amendments to the Official Plan and, assuming that the technical analysis on which they are based is sound, indicate the need for a review of some of the transportation related elements of the Official Plan. This study is structured to address the following key elements:

- o Central Area Employment
  - past and current projections of employment;
  - distribution of employment within the Central Area;
  - type of employment within the Central Area.

- o Population and Labour Force
  - Metropolitan population and labour force;
  - Regional population and labour force.

- o Employment/Transportation Usage Relationships
  - levels of usage and trends (past and future) for different components: subway, surface transit, GO Rail, road;
  - changes in usage characteristics: modal split, peaking factors.

- o Transportation Capacity Deficiencies
  - existing;
  - future.

- o Implications for the Official Plan Concept
  - possible revisions to the Official Plan
  - future action.

2.0 EMPLOYMENT

The underlying precept of the Metropolitan Official Plan was that total projected employment in the Central Area (Planning District 1) could be accommodated by the carrying capacity of the existing transportation system. This calculated level, based largely on work done by the Metropolitan Toronto Transportation Plan Review (MTTPR) was in the 435,000 -440,000 range, and was considered to represent a healthy rate of development activity and employment growth within the overall the Official Plan concept. Equally important, however, is the distribution and type of employment within the Central Area, which significantly influences transportation demands. These issues are addressed in the following sections.

2.1 Employment Projections

A comparison of Central Area employment projections is presented in Exhibit 2. For the year 2001 the MTTPR, the Official Plan and latest Planning Department estimates are similar, ranging from approximately 440,000 to 448,000, a variation of only 2.1%; for 2011 the latest Planning Department projection is approximately 473,600 or a 5.8% increase between 2001 and 2011. The interim year levels, however, are considerably different. The 1970 employment data was collected partly by municipal assessors and partly by a telephone survey conducted by the Metropolitan Planning Department. In retrospect, it is now believed that the 1970 employment was slightly overestimated. More importantly, the 1976 employment level, which was used as the base upon which future Central Area employment was forecast in the Official Plan, is now believed to be approximately 38,000 higher than actual 1976 employment levels.

As noted previously, the Official Plan concept is based on the ability of the existing and commited transportation system to carry the work trips associated with future projected employment. The forecast employment increase of 52,000 by 2001 was considered to be a realistic

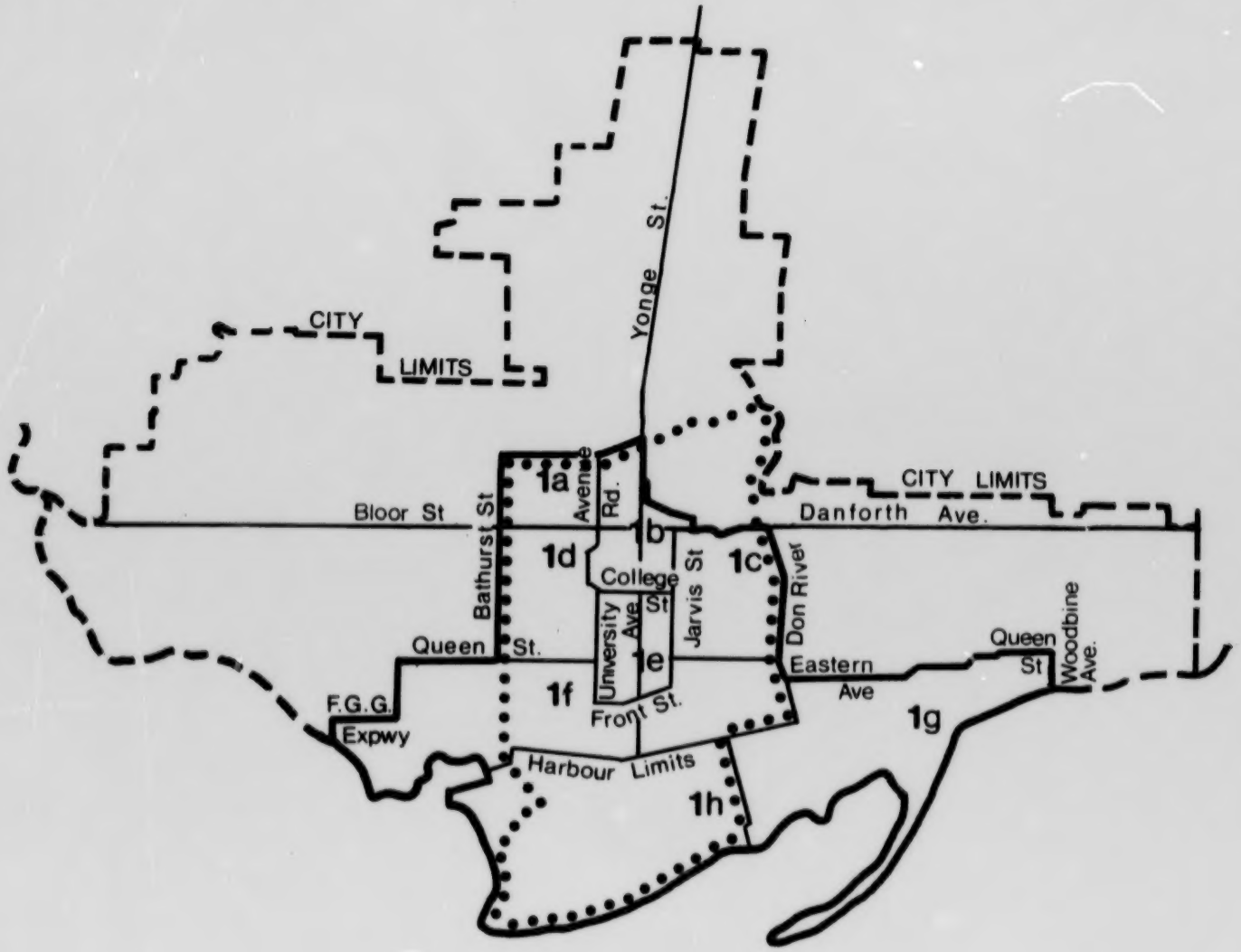
and healthy level of employment growth. However, there is no clear indication in the Plan as to what residual transportation capacity may exist at a projected 2001 Central Area employment of approximately 440,000. If, in fact, it is assumed that growth of 52,000 would take the transportation system more-or-less to capacity, the revised 1976 base of employment implies a total employment capacity in the range of 402,000, close to the 1986 actual employment of 390,000. However, it is premature to suggest that the Central Area is approaching (or will exceed, in 2001), its employment capacity, as defined by transportation system capacity. Perhaps more important than absolute employment levels are other factors such as the distribution and type of Central Area employment, which are examined in the following section.

EXHIBIT 2

COMPARISON OF CENTRAL AREA EMPLOYMENT LEVELS AND PROJECTIONS

YEAR	MTTPR	OFFICIAL PLAN	PLANNING DEPARTMENT 1986 PROJECTIONS
1970		-	318,430
1976	-	387,700	350,000[1.]
1981	421,500	-	-
1986	-	-	390,144
1987	-	-	405,500
2001	443,000[2.]	439,700	447,680
2011	-	-	473,610

1. estimate of 1976 employment based on interpolation 1970 and 1984 employment surveys
2. assumed restrictions on Central Area employment growth.



PLANNING DISTRICT 1

CENTRAL AREA CORDON

EXHIBIT 3 :
PLANNING DISTRICT 1 AND CENTRAL AREA CORDON

EXHIBIT 4

TOTAL EMPLOYMENT BY 4 CATEGORIES
1970, 1986, 2001 AND 2011
PLANNING DISTRICT 1

1970

Minor Planning Districts	Office	Factory/ Warehouse	Retail/ Service	Other	Total
1a.	2,727	709	725	3,118	7,279
1b.	35,868	611	5,175	9,446	51,100
1c.	3,112	1,945	493	6,489	12,039
1d.	10,257	4,715	1,403	20,321	36,696
1e.	82,282	5,963	23,389	24,181	135,815
1f.	6,053	46,379	3,121	11,522	67,075
1g.	227	5,351	1,200	1,234	8,012
1h.	162	0	35	217	414
TOTAL	140,688	65,673	35,541	76,528	318,430

1986

1a.	3,942	279	2,413	1,641	8,275
1b.	48,635	529	12,846	11,592	73,602
1c.	7,120	966	2,324	6,279	16,689
1d.	17,446	1,921	6,383	17,295	43,045
1e.	124,423	2,520	18,991	21,697	167,631
1f.	29,213	18,422	11,066	7,800	66,501
1g.	2,552	8,048	1,612	1,446	13,658
1h.	98	110	68	467	743
TOTAL	233,429	32,795	55,703	68,217	390,144

(Projected) 2001 (M1-86)

1a	4,398	216	2,924	1,754	9,292
1b	52,904	410	17,848	6,187	77,349
1c	6,783	591	3,423	6,383	17,180
1d	19,045	1,241	8,604	16,437	45,327
1e	142,788	961	28,908	16,322	188,979
1f	56,310	18,008	15,179	6,948	96,445
1g	3,758	5,493	2,747	470	12,468
1h	49	3	546	39	637
TOTAL	286,035	26,923	80,179	54,540	447,677

(Projected) 2011 (M1-86)

1a	4,390	208	2,891	1,896	9,385
1b	53,250	368	18,547	6,142	78,307
1c	6,795	562	3,439	6,409	17,205
1d	19,038	1,155	8,609	16,999	45,821
1e	145,862	807	29,743	16,237	192,649
1f	76,362	16,870	16,411	7,159	116,802
1g	3,802	5,641	2,745	643	12,831
1h	49	3	551	39	642
TOTAL	309,568	25,614	82,936	55,524	473,642

Source: MTPD Research Division

2.2 Central Area Employment Characteristics

Exhibit 3 shows the minor planning districts (MPD) in the Central Area. In terms of employment, the key MPD's are: 1.b (Midtown) 1.e (Downtown) and 1.f (Central Waterfront). A breakdown of employment by four types and MPD for 1970, 1986 (both based on surveys), 2001 and 2011 (estimates from the latest MPTD projections) is presented in Exhibit 4. A number of key observations can be drawn from Exhibit 4:

- o office employment was 44% of total Central Area employment in 1970. This proportion is expected to increase to 64% in 2001 and to 65% in 2011;

- o office employment accounts for 113% of the net growth in Central Area employment between 1970 and 2001 (109% between 1970 and 2011), or about 145,300 (168,900 to 2011) office employment growth versus 129,200 (155,200 to 2011) total employment growth. Between 1986 and 2011, office employment growth accounts for 91% of total Central Area employment growth. For the 1986-2001 and 1986-2011 periods, the relatively lower net growth rate reflects the substantial decline in Factory/Warehouse employment between 1970 and 1986;

- o while industrial (i.e. Factory/Warehouse) employment in the Central Area declined by about 32,900 between 1970 and 1986, a reduction of 50%, a further decrease of only 5,900 is projected between 1986 and 2001, with a further decrease of approximately 1,300 between 2001 and 2011, indicating that a 'stable minimum' industrial employment level has been reached;

- o in terms of distribution, the Midtown, Downtown and Central Waterfront areas account for 84% of all Central Area employment growth between 1970 and 2001 and 96% of all growth expected between 1986 and 2001. Between 2001 and 2011 these

areas are predicted to account for 96% of the growth in Central Area employment. In the Midtown and Downtown areas growth is in the already established office and retail sectors. In the Central Waterfront however, office and retail employment growth is coupled with a significant decline in the industrial sector, indicating a change in structure as well as a change in magnitude;

- o while the changes in distribution within the Central Waterfront are not apparent, it is generally accepted that industrial employment losses are in the eastern and western sections of the area, while office employment growth is concentrated directly south of the existing Downtown area.

There are a number of implications of the changing structure of Central Area employment. Firstly, office jobs (the predominant growth sector), tend to exhibit "conventional" peak period travel characteristics compared to industrial jobs which are characterized by a higher degree of shift work and off-peak travel. Secondly, the current concentration of employment along the subway spine has resulted in an increasing reliance on the subway system and a declining role for the surface transit system in serving Central Area employment. Thirdly, a significant proportion of the high density office employment growth in the Spadina area south of Front Street (MPD 1.f) will be beyond the direct catchment areas of existing subway stations and, in the absence of rapid transit improvements, could exhibit lower transit usage characteristics than existing Central Area employment.

A key characteristic which could affect Central Area travel patterns is the proportion of part-time employment, particularly in the office sector. Exhibit 5 shows part-time employment estimates for 1986, 2001 and 2011. While office part-time employment is expected to increase from 5.6% to 8.6% between 1986 and 2001 and to 8.9% in 2011 of total office employment, the rate is considerably lower than

the Central Area averages for all employment types of 12.4% in 1986, 13.3% in 2001 and 13.4% in 2011. In the Downtown (MPD 1.e), the main office concentration, the part-time rate is lower than the average for all Central Area office employment. In absolute terms, 2001 part-time office employment is estimated to be 24,739, an increase of 11,645 over 1986; 2011 part time office employment is predicted to be 27,536, an 11.3% growth between 2001 and 2011. Presumably, some proportion of these part-time employees will continue to travel in peak periods. In summary, while increasing levels of part-time office employment will have some 'spreading' effect on peak period travel, (i.e. a greater proportion of travel outside conventional peak periods), the overall impact is not expected to be significant.

3.0 CHANGING POPULATION AND LABOUR FORCE PATTERNS

Travel patterns result from the distribution of both origins and destinations. Accordingly, in assessing future work trip travel to the Central Area, it is important to consider the distribution of population and labour force throughout the Greater Toronto Area commuter shed as well as Central Area employment. Exhibit 6 shows population and labour force data for 1971, 1981, 2001 (projected) and 2011 (projected) for the Greater Toronto Area, broken down by Region, while Exhibit 7 shows similar data for the Area Municipalities within Metro.

As shown in Exhibit 6, Metro population and labour force increased between 1971 and 1981 by 47,700 and 179,900 respectively. Between 1981 and 2011 Metro population is expected to increase by approximately 56,600, while labour force is expected to increase by only 19,000. Consequently, the Metro share of labour force has been steadily declining. At the same time, substantial population and labour force growth in all regions outside Metro, most notably Peel and York, is expected to continue to 2011. The implication for travel patterns is a continued increase in inter-regional work trips into the Central Area

EXHIBIT 5

PART-TIME EMPLOYMENT BY 4 CATEGORIES

1986, 2001 and 2011

PLANNING DISTRICT 1.

1986

Minor Planning District	Office		Factory/ Warehouse		Retail/ Service		Other		Total	
1a	460	(11.7)	20	(7.2)	649	(26.9)	262	(16.0)	1391	(16.8)
1b	3317	(6.8)	76	(14.4)	3546	(27.6)	4014	(34.6)	10953	(14.9)
1c	431	(6.1)	22	(2.3)	625	(26.9)	1154	(18.4)	2232	(13.4)
1d	1071	(6.1)	152	(7.9)	1529	(23.9)	3038	(17.6)	5790	(13.5)
1e	4917	(4.0)	931	(36.9)	6872	(36.2)	4689	(21.6)	17409	(10.4)
1f	2396	(8.2)	743	(4.0)	2936	(26.5)	1980	(25.4)	8055	(12.1)
1g	499	(19.6)	907	(11.3)	365	(22.6)	736	(50.9)	2507	(18.4)
1h	3	(3.1)	0	(0)	30	(44.1)	13	(2.8)	46	(6.2)
Total	**13094**	**(5.6)**	**2851**	**(8.7)**	**16552**	**(29.7)**	**15886**	**(23.3)**	**48383**	**(12.4)**

2001

1a	552	(12.6)	4	(18.5)	774	(26.5)	268	(15.3)	1598	(17.2)
1b	3783	(7.2)	37	(9.0)	5960	(33.4)	756	(12.2)	10536	(13.6)
1c	820	(12.1)	37	(6.3)	1164	(34.0)	1107	(17.3)	3128	(18.2)
1d	1445	(7.6)	80	(6.5)	2297	(26.7)	3047	(18.5)	6869	(15.2)
1e	11099	(7.8)	69	(7.2)	9663	(33.4)	2411	(14.8)	23242	(12.3)
1f	6741	(12.0)	584	(3.2)	4299	(28.3)	493	(7.1)	12177	(12.6)
1g	295	(7.8)	261	(4.8)	1393	(50.7)	21	(53.8)	1970	(15.8)
1h	4	(8.2)	0	(0)	179	(32.8)	0	(0)	183	(28.7)
Total	**24739**	**(8.6)**	**1072**	**(4.0)**	**25729**	**(32.1)**	**8103**	**(14.9)**	**59643**	**(13.3)**

2011

1a	527	(12.0)	4	(1.9)	745	(25.8)	283	(14.9)	1559	(16.6)
1b	3845	(7.2)	32	(8.7)	6088	(32.8)	769	(12.5)	10734	(13.7)
1c	803	(11.8)	35	(6.2)	1153	(33.5)	1101	(17.2)	3092	(18.0)
1d	1485	(7.8)	73	(6.3)	2291	(26.6)	3180	(18.7)	7029	(15.3)
1e	11814	(8.1)	48	(5.9)	9940	(33.4)	2576	(15.9)	24378	(12.7)
1f	8744	(11.5)	552	(3.3)	4646	(28.3)	529	(7.4)	14471	(12.4)
1g	314	(8.3)	280	(5.0)	1378	(50.2)	26	(4.0)	1998	(15.6)
1h	4	(8.2)	0	(0.0)	186	(33.8)	0	(0.0)	190	(30.6)
Total	**27536**	**(8.9)**	**1024**	**(4.0)**	**26427**	**(31.9)**	**8464**	**(15.2)**	**63451**	**(13.4)**

Note: Figures in parentheses represent percentage of total employment.

EXHIBIT 6

POPULATION AND TOTAL LABOUR FORCE LEVELS AND PROJECTIONS
1971,1981,2001 AND 2011

GREATER TORONTO AREA

POPULATION

REGION	1971 NUMBER	1971 REGIONAL SHARE (%)	1981 NUMBER	1981 REGIONAL SHARE (%)	1981 GROWTH 71-81 (%)	2001 NUMBER	2001 REGIONAL SHARE (%)	2001 GROWTH 81-2001 (%)	2011 NUMBER	2011 REGIONAL SHARE (%)	2011 GROWTH 81-2011 (%)
METRO TORONTO	2089729	71.6%	2137395	62.5%	2.3%	2186672	50.8%	2.3%	2193958	47.0%	2.6%
YORK REGION	166060	5.7%	252053	7.4%	51.8%	514818	12.0%	104.2%	613283	13.1%	143.3%
PEEL REGION	259874	8.9%	490731	14.4%	88.8%	871551	20.2%	77.6%	1034796	22.2%	110.9%
HALTON REGION	189851	6.5%	253883	7.4%	33.7%	331782	7.7%	30.7%	368355	7.9%	45.1%
DURHAM REGION	214736	7.4%	283639	8.3%	32.1%	402365	9.3%	41.9%	458882	9.8%	61.8%
*TOTALS	2920250	100.0%	3417701	100.0%	17.0%	4307188	100.0%	26.0%	4669274	100.0%	36.6%

TOTAL LABOUR FORCE

METRO TORONTO	1027795	-	1207630	63.7%	17.5%	1245914	52.0%	3.2%	1226646	48.2%	1.6%
YORK REGION	N/A	-	133010	7.0%	-	274521	11.5%	106.4%	318792	12.5%	139.7%
PEEL REGION	N/A	-	272775	14.4%	-	495740	20.7%	81.7%	579365	22.8%	112.4%
HALTON REGION	N/A	-	136915	7.2%	-	176410	7.4%	28.8%	190266	7.5%	39.0%
DURHAM REGION	N/A	-	144220	7.6%	-	204822	8.5%	42.0%	227419	8.9%	57.7%
*TOTALS	N/A	-	1894550	100.0%	-	2397407	100.0%	26.5%	2542488	100.0%	34.2%

* PERCENTAGE TOTALS MAY NOT ADD DUE TO ROUNDING

EXHIBIT 7

POPULATION AND TOTAL LABOUR FORCE LEVELS AND PROJECTIONS
1971,1981,2001 AND 2011

METROPOLITAN TORONTO

POPULATION

REGION	1971 NUMBER	1971 METRO SHARE (%)	1981 NUMBER	1981 METRO SHARE (%)	GROWTH 71-81 (%)	2001 NUMBER	2001 METRO SHARE (%)	GROWTH 81-2001 (%)	2011 NUMBER	2011 METRO SHARE (%)	GROWTH 81-2011 (%)
P.D.1	N/A	-	112387	5.3%	-	163341	7.5%	45.3%	183661	8.4%	63.4%
TORONTO	712786	34.1%	599217	28.0%	-15.9%	609525	27.9%	1.7%	629269	28.7%	5.0%
NORTH YORK	504150	24.1%	559521	26.2%	11.0%	562374	25.7%	0.5%	555600	25.3%	-0.7%
SCARBORO'	338022	16.2%	443353	20.7%	31.2%	488895	22.4%	10.3%	488459	22.3%	10.2%
ETOBICOKE	282686	13.5%	298713	14.0%	5.7%	299942	13.7%	0.4%	296656	13.5%	-0.7%
YORK	147301	7.0%	134617	6.3%	-8.6%	132089	6.0%	-1.9%	131053	6.0%	-2.6%
EAST YORK	104784	5.0%	101974	4.8%	-2.7%	93847	4.3%	-8.0%	92921	4.2%	-8.9%
*TOTALS	2089729	100.0%	2137395	100.0%	2.3%	2186672	100.0%	2.3%	2193958	100.0%	2.6%

TOTAL LABOUR FORCE

P.D.1	N/A	-	68970	5.7%	-	98053	7.9%	42.2%	106188	8.7%	54.0%
TORONTO	367005	35.7%	343785	28.5%	-6.3%	344228	27.6%	0.1%	344316	28.1%	0.2%
NORTH YORK	240400	23.4%	313285	25.9%	30.3%	323324	26.0%	3.2%	315695	25.7%	0.8%
SCARBORO'	154075	15.0%	246595	20.4%	60.0%	279994	22.5%	13.5%	275521	22.5%	11.7%
ETOBICOKE	135605	13.2%	172490	14.3%	27.2%	176556	14.2%	2.4%	173008	14.1%	0.3%
YORK	73810	7.2%	73845	6.1%	0.0%	70878	5.7%	-4.0%	69171	5.6%	-6.3%
EAST YORK	56900	5.5%	57630	4.8%	1.3%	50934	4.1%	-11.6%	48935	4.0%	-15.1%
*TOTALS	1027795	100.0%	1207630	100.0%	17.5%	1245914	100.0%	3.2%	1226646	100.0%	1.6%

* PERCENTAGE TOTALS MAY NOT ADD DUE TO ROUNDING

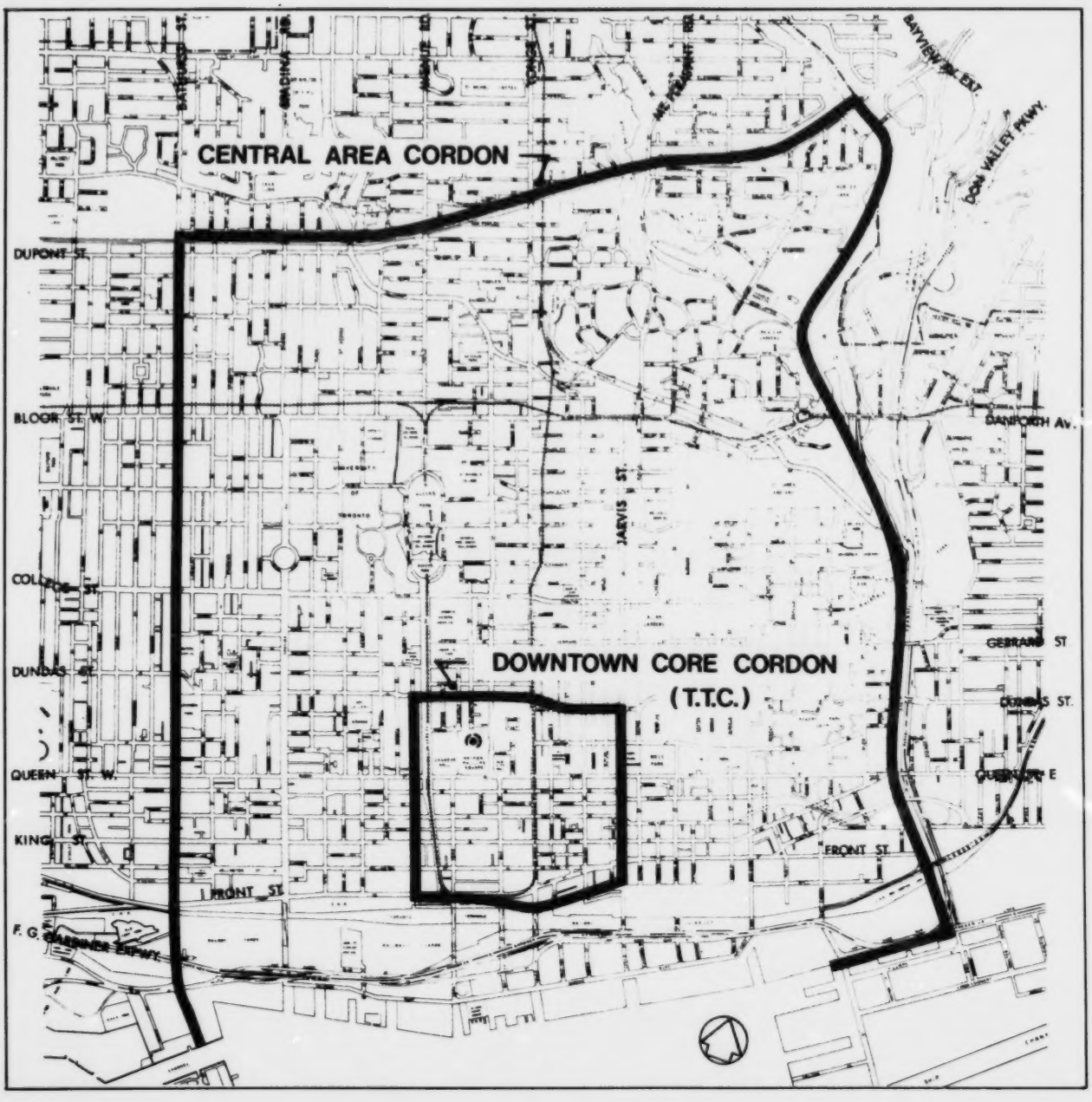


EXHIBIT 8 : CENTRAL AREA AND DOWNTOWN CORDONS

EXHIBIT 9

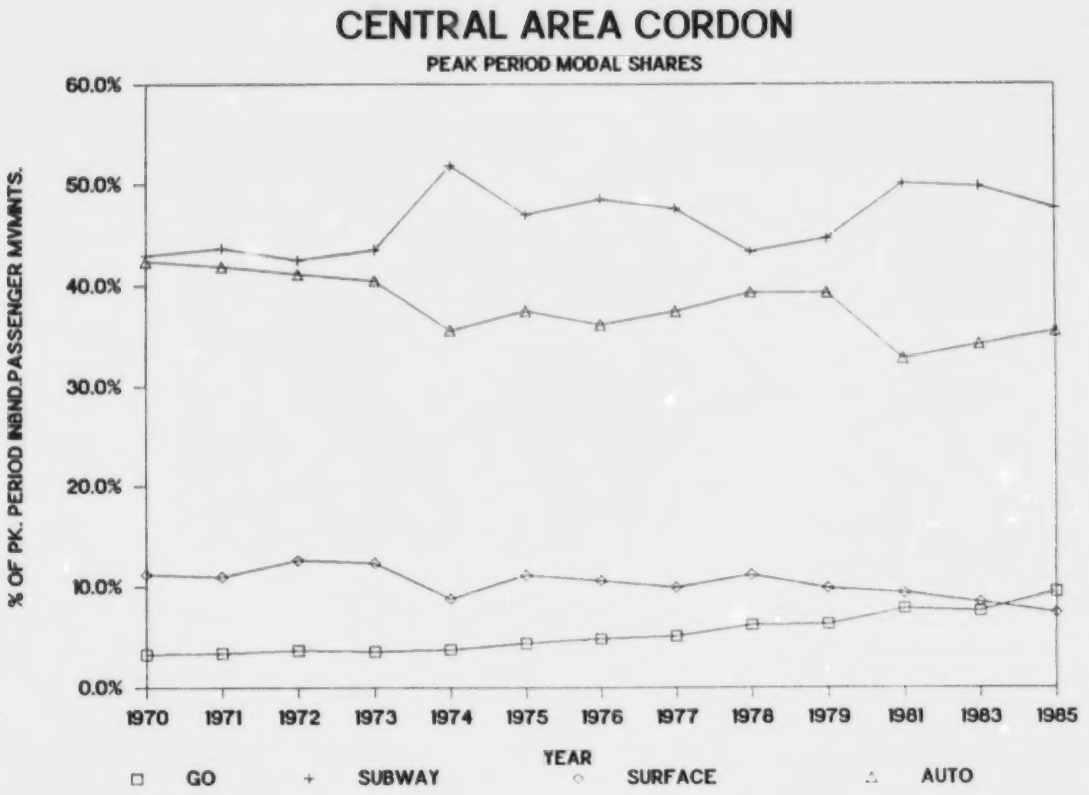
CENTRAL AREA CORDON
INBOUND PASSENGER MOVEMENTS A.M. PEAK HOUR
1970 TO 1985

YEAR	GO TRAIN	% OF TOTAL	SURFACE	% OF TOTAL	SUBWAY	% OF TOTAL	TOTAL TRANSIT	% OF TOTAL	TOTAL AUTO	% OF TOTAL	TOTAL TRAN & AUTO
1970	4200	3.8%	12431	11.2%	50275	45.4%	66906	60.4%	43929	39.6%	110835
1971	4700	4.0%	12661	10.9%	53172	45.8%	70533	60.7%	45617	39.3%	116150
1972	5067	4.3%	14690	12.5%	52022	44.4%	71779	61.2%	45427	38.8%	117206
1973	5240	4.2%	15808	12.6%	56922	45.4%	77970	62.2%	47314	37.8%	125284
1974	5513	4.4%	10174	8.0%	69016	54.5%	84703	66.9%	41956	33.1%	126659
1975	6825	5.4%	13117	10.4%	62195	49.3%	82137	65.1%	44124	34.9%	126261
1976	7633	5.9%	13406	10.4%	63572	49.6%	84611	66.0%	43678	34.0%	128289
1977	8678	6.5%	12809	9.5%	66253	49.4%	87740	65.4%	46436	34.6%	134176
1978	9709	7.9%	13475	11.0%	54615	44.4%	77799	63.2%	45210	36.8%	123009
1979	10536	7.7%	13393	9.8%	63013	46.0%	86942	63.5%	50036	36.5%	136978
1981	13134	9.1%	13513	9.3%	74652	51.5%	101299	69.8%	43739	30.2%	145038
1983	12875	9.0%	12564	8.8%	71543	49.8%	96982	67.5%	46593	32.5%	143575
1985	15930	11.4%	9913	7.1%	67292	48.0%	93135	66.5%	46989	33.5%	140124

CENTRAL AREA CORDON
INBOUND PASSENGER MOVEMENTS 7:00 A.M. TO 9:00 A.M.
1970 TO 1985

YEAR	GO TRAIN	% OF TOTAL	SURFACE	% OF TOTAL	SUBWAY	% OF TOTAL	TOTAL TRANSIT	% OF TOTAL	TOTAL AUTO	% OF TOTAL	TOTAL TRAN & AUTO
1970	6000	3.3%	20432	11.3%	78133	43.0%	104565	57.6%	77029	42.4%	181594
1971	6700	3.4%	21531	11.0%	85580	43.7%	113811	58.1%	82083	41.9%	195894
1972	7283	3.7%	24757	12.6%	83204	42.5%	115244	58.9%	80484	41.1%	195728
1973	7494	3.6%	25990	12.4%	91055	43.5%	124539	59.5%	84757	40.5%	209296
1974	8133	3.8%	18943	8.8%	111335	51.9%	138411	64.5%	76288	35.5%	214699
1975	9456	4.4%	24035	11.2%	101190	47.0%	134681	62.5%	80645	37.5%	215326
1976	10677	4.8%	23511	10.6%	107424	48.5%	141612	63.9%	79840	36.1%	221452
1977	11499	5.1%	22425	9.9%	107920	47.6%	141844	62.6%	84821	37.4%	226665
1978	13193	6.2%	23764	11.2%	92237	43.4%	129194	60.7%	83562	39.3%	212756
1979	14909	6.3%	23334	9.9%	105621	44.6%	143864	60.8%	92842	39.2%	236706
1981	19441	7.8%	23220	9.4%	124132	50.1%	166793	67.3%	81167	32.7%	247960
1983	18520	7.6%	20677	8.5%	121349	49.8%	160546	65.8%	83274	34.2%	243820
1985	22610	9.5%	17607	7.4%	113337	47.7%	153554	64.6%	84226	35.4%	237780

EXHIBIT 10


CENTRAL AREA CORDON
PEAK PERIOD MODAL SHARES
% OF PK. PERIOD INBND.PASSENGER MVMNTS.
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1981 1983 1985
YEAR
GO
SUBWAY
SURFACE
AUTO

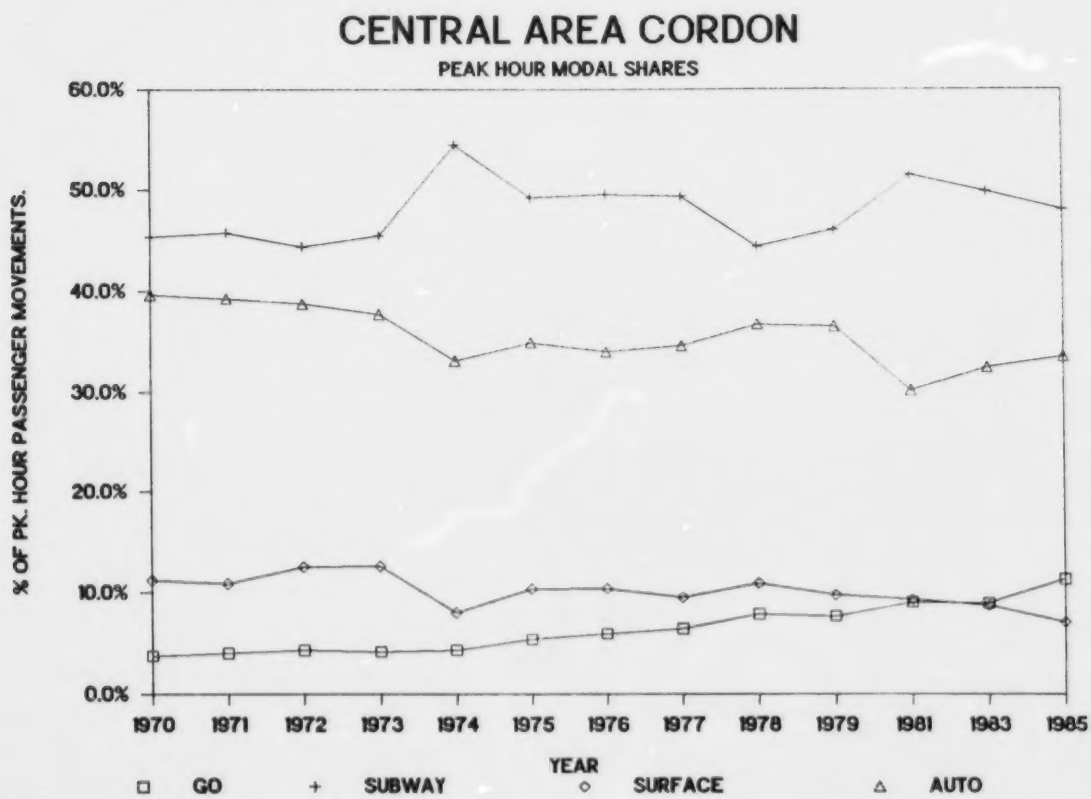

CENTRAL AREA CORDON
PEAK HOUR MODAL SHARES
% OF PK. HOUR PASSENGER MOVEMENTS.
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
1970 1971 1972 1973 1974 1975 1976 1977 1978 1979 1981 1983 1985
YEAR
GO
SUBWAY
SURFACE
AUTO

EXHIBIT 11

DOWNTOWN CORDON (T.T.C.)
INBOUND PASSENGER MOVEMENTS A.M. PEAK HOUR
1970 TO 1985

YEAR	GO TRAIN	% OF TOTAL	SURFACE	% OF TOTAL	SUBWAY	% OF TOTAL	TOTAL TRANSIT	% OF TOTAL	TOTAL AUTO	% OF TOTAL	TOTAL TRAN & AUTO
1970	4200	5.4%	14267	18.4%	35629	45.8%	54096	69.6%	23633	30.4%	77729
1971	4700	6.3%	12985	17.5%	36631	49.5%	54316	73.4%	19704	26.6%	74020
1972	5067	6.4%	12802	16.1%	40175	50.7%	58044	73.2%	21269	26.8%	79313
1973	5240	7.1%	12625	17.0%	34146	46.0%	52011	70.1%	22229	29.9%	74240
1974	5513	6.9%	12202	15.3%	41836	52.3%	59551	74.4%	20460	25.6%	80011
1975	6470	8.0%	10935	13.6%	40524	50.4%	57929	72.1%	22470	27.9%	80399
1976	5066	6.4%	12554	15.8%	44520	56.1%	62140	78.3%	17208	21.7%	79348
1977	7617	10.7%	10169	14.3%	35465	49.7%	53251	74.7%	18064	25.3%	71315
1978	8759	11.8%	11045	14.9%	34473	46.6%	54277	73.4%	19695	26.6%	73972
1979	8070	10.9%	9503	12.9%	35547	48.1%	53120	71.9%	20757	28.1%	73877
1980	11080	13.2%	11759	14.0%	41253	49.0%	64092	76.1%	20151	23.9%	84243
1981	12520	13.1%	11526	12.0%	53328	55.7%	77374	80.8%	18368	19.2%	95742
1982	13601	15.4%	10299	11.6%	46134	52.2%	70034	79.2%	18385	20.8%	88419
1983	13300	15.7%	11488	13.6%	37314	44.0%	62102	73.3%	22625	26.7%	84727
1984	14316	17.3%	8469	10.2%	37919	45.7%	60704	73.1%	22285	26.9%	82989
1985	14917	16.5%	9730	10.8%	45303	50.1%	69950	77.4%	20397	22.6%	90347

DOWNTOWN CORDON (T.T.C.)
INBOUND PASSENGER MOVEMENTS 7:00 A.M. TO 9:00 A.M.
1970 TO 1985

YEAR	GO TRAIN	% OF TOTAL	SURFACE	% OF TOTAL	SUBWAY	% OF TOTAL	TOTAL TRANSIT	% OF TOTAL	TOTAL AUTO	% OF TOTAL	TOTAL TRAN & AUTO
1970	6000	5.1%	22969	19.6%	51121	43.5%	80090	68.2%	37387	31.8%	117477
1971	6700	6.0%	21202	19.0%	51795	46.4%	79697	71.4%	31906	28.6%	111603
1972	7283	6.2%	20806	17.6%	55703	47.2%	83792	71.0%	34214	29.0%	118006
1973	7494	6.5%	21222	18.5%	50630	44.2%	79346	69.3%	35136	30.7%	114482
1974	8133	6.6%	20806	16.9%	61144	49.6%	90083	73.1%	33183	26.9%	123266
1975	9041	7.3%	21532	17.3%	56693	45.5%	87266	70.0%	37340	30.0%	124606
1976	7367	6.0%	20059	16.5%	66623	54.7%	94049	77.2%	27742	22.8%	121791
1977	11579	10.3%	17754	15.8%	53635	47.7%	82968	73.7%	29551	26.3%	112519
1978	13092	11.1%	18117	15.4%	53882	45.9%	85091	72.4%	32372	27.6%	117463
1979	15446	13.0%	16686	14.1%	53227	44.8%	85359	71.9%	33350	28.1%	118709
1980	16470	12.4%	19100	14.4%	64052	48.3%	99622	75.2%	32926	24.8%	132548
1981	18951	13.2%	18748	13.1%	76037	53.0%	113736	79.2%	29781	20.8%	143517
1982	21864	16.2%	16144	12.0%	67049	49.7%	105057	77.9%	29865	22.1%	134922
1983	20730	15.5%	17765	13.3%	58748	43.9%	97243	72.7%	36472	27.3%	133715
1984	22644	17.2%	14912	11.3%	57379	43.5%	94935	71.9%	37076	28.1%	132011
1985	24185	17.0%	15965	11.2%	68177	47.9%	108327	76.2%	33900	23.8%	142227

as employment continues to increase within Metro. As shown in Exhibit 7, the Cities of Toronto and Scarborough are the only Area Municipalities expected to have population and labour force growth between 1981 and 2011, with the others remaining relatively stable or declining slightly. Significant population and labour force growth is projected for the Central Area (i.e. P.D.1.), with this growth largely due to the residential component of major development projects such as Harbourfront and the Railway lands.

The travel patterns implied by the current 2001 and 2011 forecasts have several implications which are addressed in detail in Section 4.2.

A final qualification should be placed on the population and labour force forecasts, which are based on current economic and policy conditions. As discussed in Background Report No.4 - Housing Intensification, a number of options exist for significantly increasing the housing stock within Metropolitan Toronto. These programs, if pursued, could alter the projected regional distribution of population, labour force and employment and change projected trip patterns. The extent to which these initiatives may be successful is unknown at this time but should obviously be monitored and future projections adjusted accordingly. The critical issue of trip distribution is addressed in the following section.

4.0 TRANSPORTATION DEMAND

The following section reviews trends in transportation demand to the Central Area, with emphasis on a.m. peak hour and peak period (7:00-9:00 a.m.) travel. In addition, a brief discussion of trip

distribution patterns, based on Census data and future land use projections is presented. Finally, analysis of the factors which determine peak period transportation demand, extracted largely from the City of Toronto's 1986 Quinquennial Review, is discussed. The material herein is not intended as a comprehensive review of any of these issues, rather it is intended to provide an overview and appreciation of the Central Area transportation situation.

4.1 System Usage

Exhibit 8 shows two cordons commonly used to report Central Area travel: The Central Area Cordon (bounded by Bathurst Street, the CP North Toronto Sub-division and the Don River) and the Downtown Cordon (bounded by Jarvis Street, the Lakeshore rail corridor, Simcoe Street and Dundas Street. This latter cordon is a T.T.C. definition and should not be confused with the Downtown Cordon as defined in the Metro Cordon Count Program. It has been used in this study because count data is available on an annual basis back to 1970, whereas Metro data is available only on a biannual basis from 1975). Peak hour and peak period travel data is presented in Exhibits 9 through 12. A number of observations can be drawn:

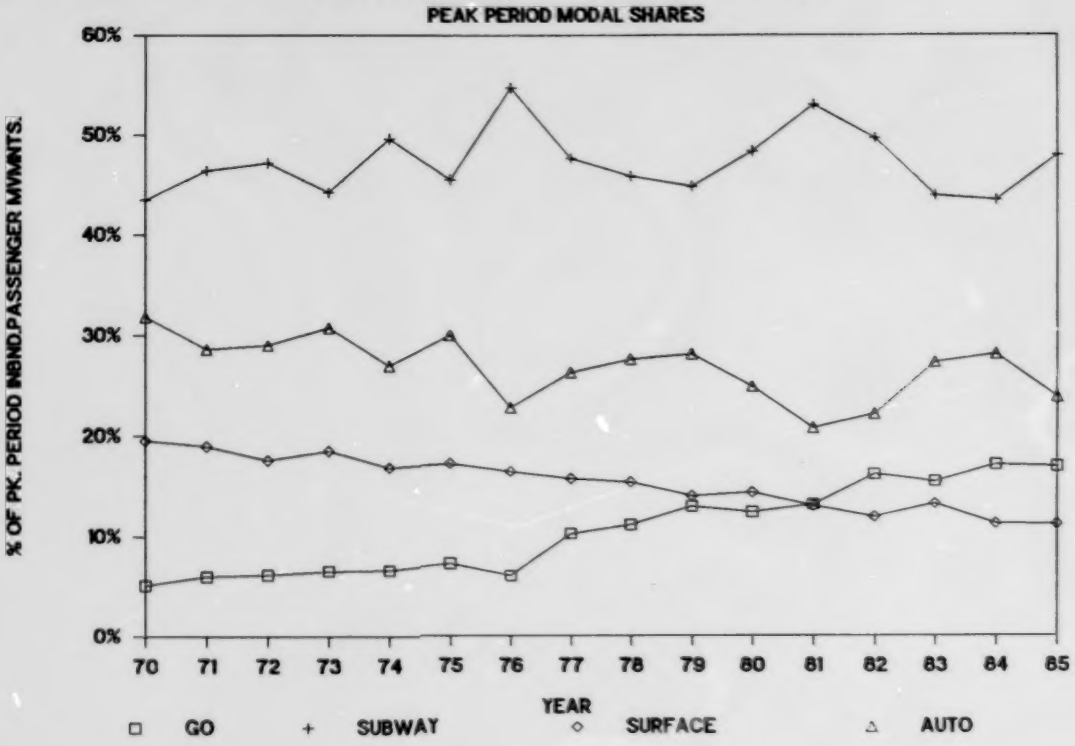
- between 1970 and 1985, the general trend has been for trips to increase at both cordons. Since 1975, total travel has increased by 11.0% (peak hour) or 10.4% (peak period) at the Central Area Cordon and by 12.4% (peak hour) or 14.1% (peak period) at the Downtown Cordon;

- surface transit ridership (both total and modal share) has declined steadily at both cordons, while GO Rail ridership (again, both total and modal share) has increased significantly. This simply reflects the changing demographic nature of the Greater Toronto Area, with declining population and labour force in the City of Toronto (most notably outside the Central Area) and continued

EXHIBIT 12

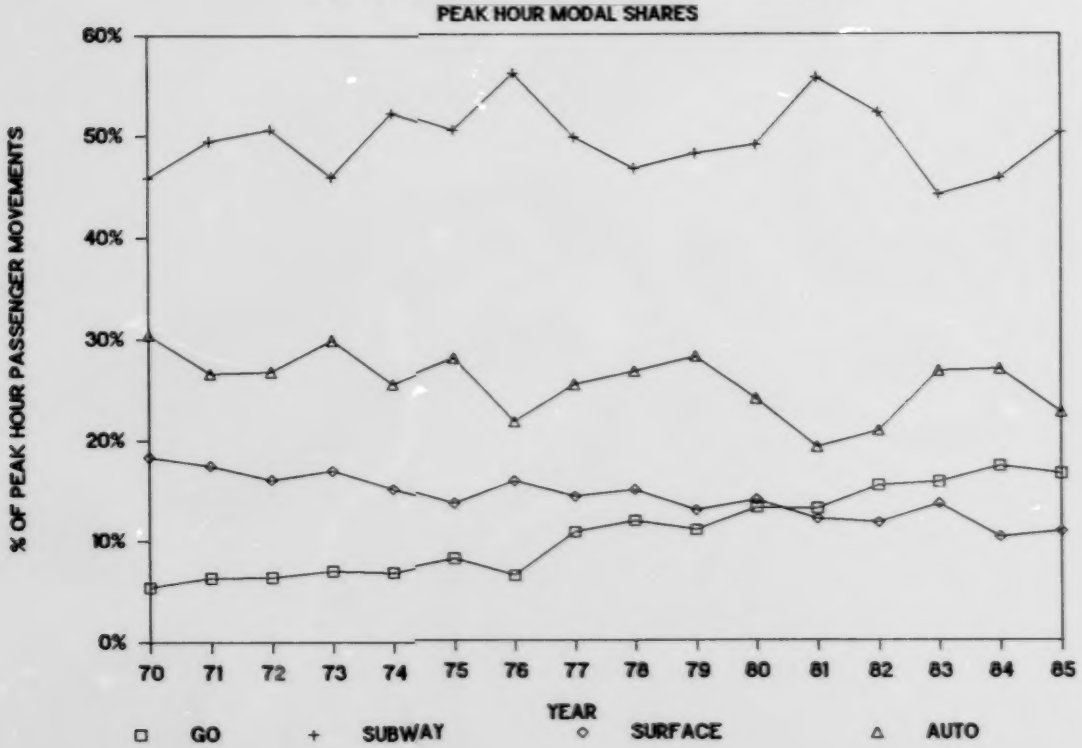
DOWNTOWN CORDON (T.T.C.)

PEAK PERIOD MODAL SHARES



DOWNTOWN CORDON (T.T.C.)

PEAK HOUR MODAL SHARES



growth in the outer areas which are well served by GO Rail. This trend has been exacerbated by the decline in industrial jobs in the outer parts of the Central Area which are served primarily by surface transit and an increase in office jobs concentrated around subway stations;

- o in percentage terms, subway ridership has increased at both cordons, while auto travel has decreased between 1970 and 1985. Since 1975, however, there has been considerable fluctuation in modal shares but no clear upward or downward trend for either subway or auto travel. What is apparent from Exhibits 10 and 12 is the competition of the two modes; years with a high subway modal split generally have low auto modal splits and vice versa. Regarding absolute travel levels, subway ridership has fluctuated both up and down since 1975, while auto ridership has done similarly since 1970.

Additional data from the Metro Cordon Count Program indicates that, due to declining peak period auto occupancy rates into the Central Area, a 4.1% increase in peak period inbound auto person trips between 1975 and 1985 has been coupled with a 9.0% increase in auto vehicles for the same period.

No mention has been made to this point regarding capacity of existing transportation facilities and the level of service implied by current levels of utilization. In fact, transportation system capacity and calculations of residual capacity have historically been the key issues with respect to Central Area employment and form the basis of the City of Toronto's Central Area Plan. However, as the City has recognized in the 1986 Quinquennial Review, simple arithmetical calculations of residual capacity can be misleading if not suitably qualified.

Exhibit 13

Central Area Transportation Capacity

	1985 Peak Hour Volume	Practical Capacity	Residual Capacity
Subway - Yonge	31,700	34,000	2,300
- University	23,200	34,000	10,800
Surface Transit	9,900	N/A (1)	---
GO Rail	15,900	23,000 (2)	7,100
Road System	47,000	N/A (3)	---
	127,700	N/A	20,200

Notes:

(1) Surface Transit capacity into the Central Area is tailored to demand on each route. Therefore, theoretically they should not be residual capacity. The capacity however, can be incrementally increased by adding vehicles to each route as required.

(2) GO rail capacity is based on existing service frequencies plus scheduled improvements to the Milton line.

(3) The road system serving the Central Area is assumed to be at its practical capacity.

As an example, Exhibit 13 presents a calculation of residual peak hour Central Area transportation capacity. While it would appear from this simple presentation that 20,000 additional peak hour trips, an increase of 20% over existing volumes, could be accommodated by the existing transportation system, a number of key points should be noted:

- Subway volumes and capacities are quoted at the peak points south of Bloor Street rather than entering the Central Area, since these are considered the "bottleneck" points. Residual capacity on the Yonge line is limited, and most spare subway capacity exists on the University line. Even at current ridership levels, a significant degree of peak period congestion exists, particularly on the Yonge line, and the capacity estimate of 34,000 is intended to depict the maximum acceptable level of congestion which could be sustained;

- Surface transit capacity can be increased substantially on existing routes. However, with a declining population and labour force in the areas served by surface routes (primarily the east-west streetcar routes), there is a declining market to be served. As noted in the discussion of population, any efforts directed at increasing residential development in those parts of the City of Toronto served by the existing surface transit system could change the current trend. Additionally, population increases within the Central Area could result in an increase in short-distance surface transit trips, although this implies a change in function from "line-haul" to "circulation-distribution" for the surface transit services;

- GO Rail capacity assumes existing service frequency, 10 car bi-level trains on all services (excepting Richmond Hill, which is restricted to 6 car trains by existing station platforms) and scheduled improvements to the Milton line (two extra peak period trains). It is, perhaps, questionable whether this full capacity can

be utilized; experience indicates that limited services (i.e. peak period only, unidirectional operations) will remain under-utilized due to the limited flexibility provided to passengers;

- o Regarding the road system, it has been assumed for some time that the road facilities serving the Central Area (and particularly the Downtown Core) have been operating essentially at practical capacity. For example, counts on the Gardiner Expressway (for which practical capacity is rated at approximately 6,000 vehicles per hour (vph), have ranged between 5,600 vph and 6,600 vph over the past 10 years. Similarly, volume/capacity ratios at numerous intersections exceed 1.0, implying that these locations are operating in excess of "maximum" capacity. Because road system operations are highly dynamic, considerable variation in demand can be accommodated. Nevertheless, given generally high levels of congestion, the road system is generally assumed to be operating at capacity.

While the foregoing serves to illustrate the difficulties in developing a definitive estimate of residual capacity into the Central Area, it also indicates that residual capacity does exist on the subway and GO Rail facilities and based on current office development absorption rates, this residual transit capacity could accommodate 6-10 years of continued growth.

4.2 Trip Distribution

While the cordon count and peak usage data presented in the preceeding section indicates the magnitude of trips with a Central Area destination, it does not provide any information on the pattern of trip origins or the overall nature of trip distribution. Unfortunately, trip distribution information is generally sparse due to the extreme costs of collecting large amounts of data over an extremely large geographic area.

The most common source of data is the Census, which records where people live and where they work. As such, the Census data provides a description of home-to-work linkages but does not directly provide information on daily or peak hour work trips; these must be inferred from the basic place of residence, place of work data. Currently, data is available for 1971 and 1981; the place of work question was included on the 1986 Census but this data is not expected to be available until late 1988. A key source of origin-destination information will be the Transportation Tomorrow Survey, conducted in late 1986. Detailed data is being made available in 1988 and, in conjunction with 1986 Census data, will provide a more up-to-date indication of Central Area travel patterns which can be used for further analysis.

Exhibit 14 shows data from the 1971 and 1981 Census for journey-to-work to the Central Area. Of interest is the fact that the share of origins from Metro declined from 93.0% to 86.2%, despite increasing in absolute terms by 22% from 249,000 to 304,000. Origins outside Metro increased by 160%, and their regional share increased from 7.0% to 13.8%. To a large extent, the pattern of Central Area work trip growth reflects the pattern of population and labour force change over the 1971-81 period. While data from the 1986 Census and the 1986 Transportation Tomorrow Survey is not yet available, it is expected that the 1981-86 period will show a similar and possibly accelerating trend.

The trip distribution impacts of the population, labour force and employment projections discussed in previous sections of this report are shown in Exhibit 15. Forecasts derived from the Metro Travel Demand Model predict that the number and proportion of work trips from outside Metro will continue to increase significantly. At the same time, trips from parts of Metro outside the Central Area will decrease significantly in relative terms and slightly in absolute terms, while trips

Exhibit 14

Journey-to-Work to the Central Area

1971 and 1981

Zone of Residence	1971		1981		Change 1971-1981		
	No.	% Share	No.	% Share	No.	% Share	% Growth
Central Area	29,985	11.2	35,965	10.2	5,980	7.1	19.9
East Metro	68,865	25.7	88,440	25.1	19,575	23.1	28.4
North Metro	96,420	36.0	114,540	32.5	18,120	21.4	18.8
West Metro	54,000	20.2	65,260	18.5	11,260	13.3	20.9
Metro Sub-Total	**249,270**	**93.0**	**304,205**	**86.2**	**54,935**	**64.9**	**22.0**
Pickering/Ajax	1,950	0.7	4,585	1.3	2,635	3.1	135.1
York	4,785	1.8	12,070	3.4	7,285	8.6	152.2
Peel, Oakville, Milton	12,000	4.5	31,860	9.1	19,860	23.4	165.5
Fringe Sub-Total	**18,736**	**7.0**	**48,515**	**13.8**	**29,780**	**35.2**	**160.0**
TOTAL	**268,005**	**100.0**	**352,720**	**100.0**	**84,714**	**100.0**	**31.6**

EXHIBIT 15

SIMULATED JOURNEY TO WORK
TRIPS TO THE CENTRAL AREA
(24 HOUR PERIOD)

FROM	1981	%	1991	%	2001	%	2011	%
CENTRAL AREA	33,706	10.6%	44,228	13.1%	48,854	13.7%	53,807	14.5%
REST OF METRO	242,914	76.2%	235,779	69.9%	233,025	65.3%	229,500	62.0%
OUTSIDE METRO	42,261	13.3%	57,473	17.0%	75,234	21.1%	86,801	23.5%
TOTAL TRIPS	318,881	100.0%	337,480	100.0%	357,113	100.0%	370,108	100.0%

Exhibit 17

Increases in Permitted Office Development Levels
1978–1986

	Additions	Amounts millions sq.m.	millions sq.ft.
1.	1978 OMB Changes		
	- High Density Mixed Commercial Areas upzoned	0.53	5.7
	- East end Railway Lands	0.54	5.8
	- Site Specific Amendments	0.23	2.5
2.	Central Industrial District		
	- Increased office development potential	0.50	5.4
3.	Harbourfront	0.11	1.2
4.	Site Specific Amendments (1980-86) e.g. Eaton's Phase II, Bank of Nova Scotia	0.43	4.6
5.	Railway Lands Part II Plan	0.60	6.5
6.	Central Waterfront/Central Bayfront World Trade Centre Proposal	0.15	1.6
7.	Massey Ferguson Development	0.13	1.4
	Sub Total	**3.22**	**34.7**
8.	1975 Base Level of Permitted Development	6.55	70.5
	Grand Total	**9.77**	**105.2**

internal to the Central Area will increase. The transportation implications of these projections are threefold:

1. short-distance work trips, which would have a high walk-to-work component and a high transit modal split (for both surface and short-distance rapid transit travel) are expected to increase from 36,000 (10.2%) in 1981 to 54,000 (14.5%) in 2011;

2. medium distance work trips from within Metro, which tend to be oriented to the subway and arterial road systems (and, in the case of the City of Toronto, to the east-west streetcar system), are expected to decrease by 13,500 between 1981 and 2011, to a large extent offsetting the growth in short distance trips referenced in 1. above. Recent announcements with respect to additional residential developments east of the downtown area may help reduce the anticipated decrease; and

3. long distance work trips (from beyond Metropolitan Toronto), which would generally use the commuter rail and expressway systems, are expected to increase from 48,500 (13.8%) in 1981 to 86,800 (23.5%) in 2011.

Again, it should be noted that these projected origin-destination patterns, and the conclusions drawn, are based on current forecasts of population, labour force and employment. Housing intensification within Metro Toronto could change these patterns, increasing ridership on T.T.C. services and slowing the growth of GO Rail ridership. Alternatively, further declines in Metro labour force could intensify existing trends. As noted previously, the function of surface transit services could change, with higher passenger loads over shorter distances within the Central Area and decreasing ridership on longer distance line-haul services. This in turn could require a restructuring of surface services, in terms of both frequency and routing.

4.3 Transportation Characteristics

Over the past decade the method of estimating peak period travel demand, particularly for transit, has been generally based on a procedure developed originally in 1975 by a consultant to the City of Toronto as the basis for establishing the development limits of the Central Area Plan. The method can be expressed as a simple arithmetic formula:

Office Floor Space X Occupancy Rate/Floor Space per Worker (FSW) X Attendance Rate X Peak Hour Factor = Peak Hour Travel Demand

and

Peak Hour Travel Demand X Transit Modal Split = Peak Hour Transit Travel Demand.

In estimating a development level, of course, the process works in reverse; the residual capacity of the existing transportation system is calculated by subtracting currently observed volumes from estimated system capacity and the result is then translated into commercial floor space by application of the various factors. This procedure is obviously a gross simplification of reality which has, nevertheless, been accepted as a reasonably accurate means of estimating the travel demand associated with specific (or area-wide) development proposals, largely because of its ease of application. The procedure has a number of key underlying assumptions:

- Growth in total travel will be directly related to growth in office development and consequently, office employment; conversely, as applied by the City, it is assumed that all residual transportation capacity will be available for office travel. As noted previously, other types of employment have declined in the Central Area (excepting retail). Additionally, no change in existing levels of non-work peak hour travel is assumed, implying a percentage decrease; as non-work travel is generally a small percentage of total peak hour travel, this assumption is not considered critical.

- o If the procedure is to be useful, reasonably accurate estimates of the various factors must be made, and updated frequently if any instability over time is expected. This in turn raises questions of survey/monitoring methods and costs, factor definitions and other issues of critical importance. These are addressed further in the discussion of individual factors.

- o In applying this procedure, it is often important to distinguish between average and marginal factor values or trends.

- o Finally, there is the fundamental assumption that the formula as given adequately addresses all necessary causal factors. If key factors are excluded (or new factors develop over time) or if some necessary proportioning is ignored, the procedure will produce inaccurate or misleading results.

The following discussion is drawn largely from the City of Toronto 1986 Quinquennial Review Background Paper No.8, entitled "Review of Transportation Planning in the Central Area 1975-1986". The material which follows is summarized from that report to which the reader is directed for a more comprehensive review.

4.3.1 Floor Space

The analysis used by the City in 1975 determined that sufficient transportation capacity existed to permit 6.55 million square metres of commercial floor space in the Central Core. (This sub-area of the Central Area is shown in Exhibit 16). Since that time, two significant events or trends have occurred:

1. The City has developed a sophisticated annual office floor space monitoring program and publishes an annual report ("The Office Monitor"), which lists all developments by status (from preliminary proposal to ready-for-occupancy), demolitions and

conversions in the Central Area. It is therefore relatively easy to track commercial development. As an example, 5.97 million square metres of commercial floor space existed or were under construction in the Central Core as of January 1, 1986 (compared with the 1986 review limit of 6.40 million square metres).

2. The current allowable office floor space has increased well beyond the "calculated" level of 6.55 million square metres proposed in 1975 and, presumably, well beyond the capacity of the existing and committed transportation system, if the original capacity calculations are accurate. As shown in Exhibit 17, various political and planning initiatives have increased permitted office development levels in the Central Core by 3.22 million square metres, to a total of 9.77 million square metres.

The first point implies that tracking of the development situation is relatively straight forward. The second point raises a fundamental question: is the implied transportation/land use relationship unrealistic or does the increased development level require substantial transportation investment and thereby undermine the intent of both the City of Toronto and Metro Official Plan. The question is central to the current discussion and will be returned to.

4.3.2 Occupancy Rate

Occupancy rate is normally expressed in the inverse as vacancy rate or the proportion of office space that is unoccupied at any given time. In the recent past, the vacancy rate has been extremely volatile, ranging from 2% in 1980, to a high of 12% in 1984, and dropping to around 8% in 1986. A common assumption (used in calculating residual transportation capacity) has been that the long-term equilibrium vacancy rate is about 5%, with a corresponding occupancy rate of 95%.

The City has suggested that the long-term equilibrium vacancy

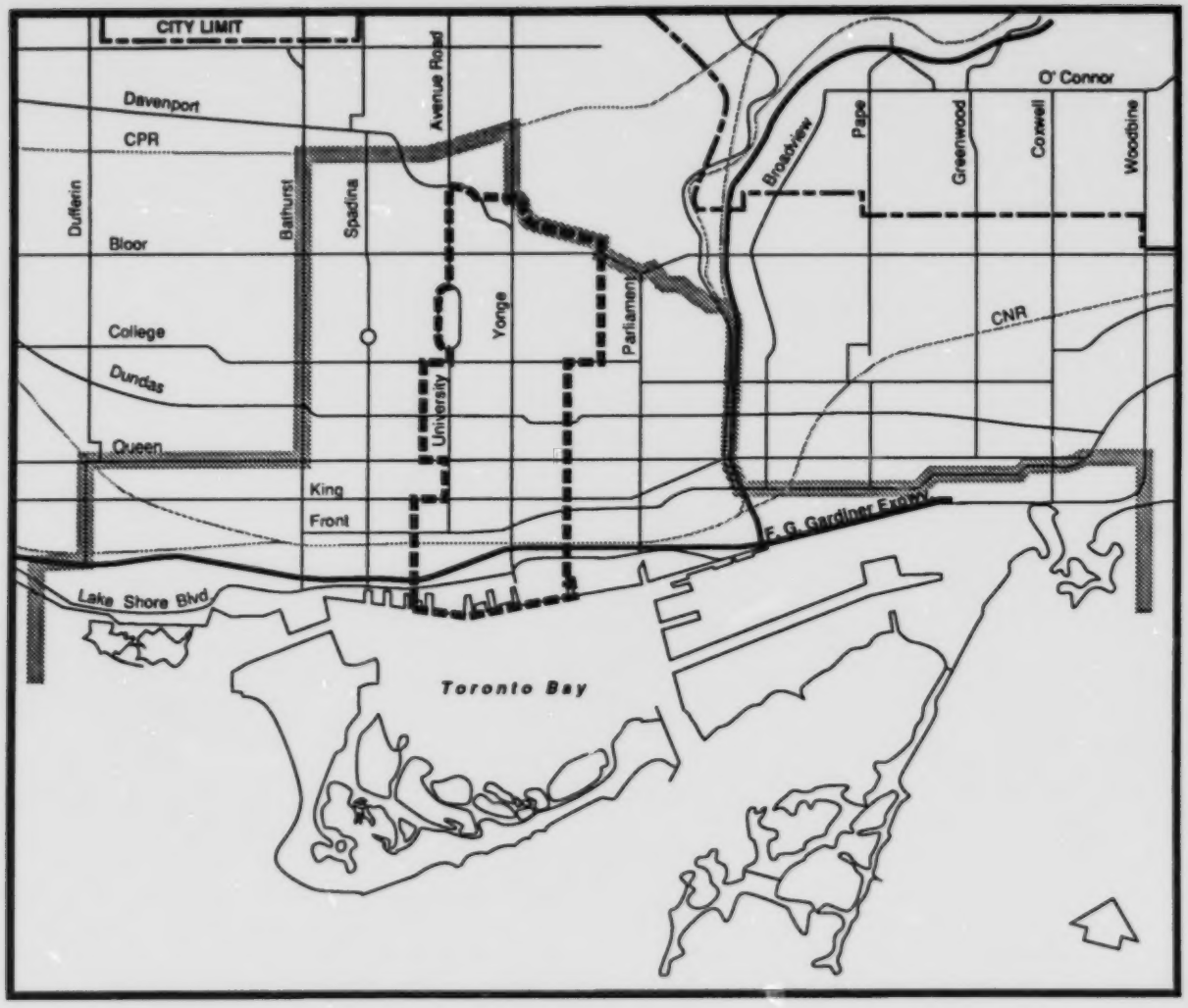


EXHIBIT 16 : CENTRAL CORE

rate may be approaching 10% due to an increasing demand for "smart" (i.e. technologically innovative) buildings which will replace, rather than add to, the stock of older buildings. Such a phenomenon is speculative at this time and bears further monitoring. Additionally, there is a concern that the "frictional" vacancy rate, which relates to space that is leased but not occupied, may change over time if there is considerable movement by tenants between buildings and if refurbishment and renovation increase. The City has suggested that the frictional vacancy rate be accounted for in the floor space per worker (FSW) index (discussed in the following section); this approach, however, hides the causal relationships which directly affect the FSW rate and cannot be supported. It must be recognized that the frictional vacancy rate is not well understood and bears further study.

4.3.3 Floor Space Per Worker (FSW) Index

The FSW rate is perhaps the single most important factor in determining Central Area travel demand since it directly relates office floor space, the variable controlled by the City's Central Area Plan, to office employment and, hence, to travel demand. Considerable speculation has ensued over the past several years as to future trends in the FSW index. As shown in Exhibit 18, the FSW rate has increased substantially since 1960. However, in the more recent past, the rate of increase has been considerably less, only 4% (i.e. 25.0 square metres to 26.0 square metres) between 1980 and 1985. The reasons for the large increase since 1960 are many, including a higher proportion of managerial and executive staff and a general improvement in office conditions. The causal relationships are not fully understood and, while increases in the FSW rate are expected in the future, there is some debate as to the extent of that increase, particularly when such components as "frictional" vacancy rate are factored out.

4.3.4 Attendance

It is generally accepted that, on any given weekday, some

Exhibit 18

Trends in Floor Space Per Worker Ratios
1960-1985

Year	Source	Sample	Area	FSW Gross* (sq.m)
1960	City of Toronto Planning Board	4,800 firms	Downtown Planning District	19.2
1970	Metro Planning Employment Survey	38 Bldgs.	Central Core	21.5
1971/72	Dr. G.H.K. Gad U. of T.	425 firms	Central Corridor	21.4
1975	IBI Group	51 firms	Central Core	22.9
1980	City of Toronto Planning & Development	265 Bldgs.	Central Core	25.0
1983	City of Toronto Planning & Development	152 Bldgs.	Central Core	25.0
1984	City of Toronto Planning & Development	162 Bldgs.	Central Core	26.2
1985	City of Toronto Planning & Development	161 Bldgs.	Central Core	26.0

* Gross square metres of occupied building area - measured from outside wall to outside wall

EXHIBIT 19

DOWNTOWN AND CENTRAL AREA CORDON
PEAK HOUR FACTORS

	DOWNTOWN CORDON (T.T.C.)			CENTRAL AREA CORDON		
	TOTAL (TRANSIT & AUTO)			TOTAL (TRANSIT & AUTO)		
YEAR	PK. PERIOD TOTAL TRAN & AUTO	PK. HOUR TOTAL TRAN & AUTO	PK. HOUR/ PK. PERIOD	PK. PERIOD TOTAL TRAN & AUTO	PK. HOUR TOTAL TRAN & AUTO	PK. HOUR/ PK. PERIOD
1970	117477	77729	66.2%	181594	110835	61.0%
1971	111603	74020	66.3%	195894	116150	59.3%
1972	118006	79313	67.2%	195728	117206	59.9%
1973	114482	74240	64.8%	209296	125284	59.9%
1974	123266	80011	64.9%	214699	126659	59.0%
1975	124606	80399	64.5%	215326	126261	58.6%
1976	121791	79348	65.2%	221452	128289	57.9%
1977	112519	71315	63.4%	226665	134176	59.2%
1978	117463	73972	63.0%	212756	123009	57.8%
1979	118709	73877	62.2%	236706	136978	57.9%
1980	132548	84243	63.6%	N/A	N/A	N/A
1981	143517	95742	66.7%	247960	145038	58.5%
1982	134922	88419	65.5%	N/A	N/A	N/A
1983	133715	84727	63.4%	243820	143575	58.9%
1984	132011	82989	62.9%	N/A	N/A	N/A
1985	142227	90347	63.5%	237780	140124	58.9%

proportion of employees will be absent from work due to illness, vacation, business travel or for other common reasons. A simple rule-of-thumb has been to apply an attendance rate of 90% implying that, on any given day, 10% of the workforce will be absent. There is some speculation that the true attendance rate may be lower, and possibly decreasing, largely due to the growing proportion of part-time Central Area employment. Obviously, some care must be taken to distinguish between changes in the peaking factor (for example, when part-time workers travel outside the peak periods) and the attendance rate (when employees travel to work fewer than five days per week). This factor has proven difficult to monitor directly and may require further consideration.

4.3.5 Peaking Factor

The peaking factor estimates the proportion of employees travelling to work in the peak hour. While the numerator is clearly defined, there is often a discrepancy in the expression of the denominator; some sources quote the peaking factor as the peak hour proportion of 24-hour inbound work trips, while others use the peak period (sometimes further complicated by the assumption that all work trips are made in the peak period, as is commonly done.) One example, which takes a ratio of peak hour trips (all purposes) to two hour peak period trips at the Downtown and Central Area cordons is presented in Exhibit 19, and indicates some fluctuation but no clear trend.

The peak hour factor is obviously important in determining total employment capacity and it is commonly assumed that the peaking factor will decline with time, as peak hour congestion promotes travel in the shoulder periods, and thereby increases the Central Area employment which can be accommodated by the existing transportation system. Two factors are important; the first relates to peak hour vs. peak period travel, for which data is readily available and no clear trend is discernable. The second relates to peak period vs. all day work

trip travel. This factor relates more to structural elements such as the proportion of part-time employment, and data is not readily available, nor can it be easily derived from the cordon count data.

4.3.6 Modal Split

The modal split characteristics of vehicular trips, both auto and transit have been discussed previously in Section 4.1. In addition, however, one should consider the proportion of walk-to-work trips which, based on a 1981 City of Toronto Survey, was estimated to be 6-8% in summer and 5-7% in winter in the Central Area. There is an expectation that this percentage may increase as Central Area population and employment continues to increase. Also, there is currently little data regarding bicycle use, which could be significant, particularly during the summer months.

4.4 Summary

From the foregoing, it should be apparent that there is considerable variation in the extent and quality of data available. Counting programs have been established and refined by Metro, the City of Toronto and the T.T.C. over many years and produce what generally is considered to be reliable and accurate cordon and peak point count data. Trip distribution data, being based on large scale, infrequent surveys, is not as comprehensive, particularly with respect to short-term shifts in travel patterns. Finally, regarding those factors used to equate Central Area transportation and employment capacities, there is generally good statistical data, often accompanied by a poor understanding of the causal relationships which shape those factors.

Traditionally, for area-wide studies and reviews of development applications, estimates of future Central Area travel demand have been based on projected office floor space construction, factored by occupancy rate, floor space per worker, attendance rate, peaking factors and modal split. Generally, there is good statistical data on

both office space construction and the various transportation demand factors, however, there is often a poor understanding of the causal relationships which shape those factors and of the impact that changes in those factors have on the trip generation associated with the existing stock of office space. As a result, an incremental approach to reviewing Central Area development which uses traditional assumptions with respect to trip generation factors to calculate additional trips to add to existing levels of travel demand, tends to result in an over estimation of total peak hour trips. Therefore, there is an increasing need for enhanced capabilities to examine the impacts of changing travel demand patterns and increased development in the Central Area. In this regard, Metropolitan and TTC staff in cooperation with City of Toronto staff propose to develop a detailed Central Area travel demand model to assist in the examination of Central Area transportation issues. Up-to-date data from the Central Area Monitoring Program will be utilized by City and Metropolitan staff to examine the causal relationships and refine assumptions with respect to Central Area trip generation.

5.0 CURRENT TRANSPORTATION PROPOSALS

Over the past several years, a number of major transportation improvements for the Central Area have been identified, most notably as part of the Central Waterfront Transportation Study (CWTS) (1983) and Network 2011 (1985) and its various background reports. Emphasis is placed herein on the major facilities and improvements which have policy implications regarding the capacity of the transportation system serving the Central Area, although mention is also made of both operational and relatively minor or local improvements.

5.1 Road Improvements

Despite considerable study and identified need, improvements are limited and consist primarily of "missing links" or widenings of existing facilities.

5.1.1 Front Street Interchange/Gardiner Expressway Widening

These two improvements were first identified in the CWTS and have always been considered by Metro staff as inseparable, although it has been argued that the Front Street interchange alone would improve access to the Central Area while not increasing road capacity and, therefore, raise no serious policy concerns. The Metro position maintains that the Gardiner Widening is required simply to maintain existing levels of service and utilize the additional ramp capacity of the Front Street interchange. Essentially, the issue is one of phasing and both facilities are generally supported by the City of Toronto.

The Front Street extension and interchange, at an estimated cost of approximately $72.2 million in inflated dollars, is currently the subject of an environmental and feasibility study which should be completed in mid 1988, with construction scheduled to begin in 1991 assuming no undue delay in the obtaining of necessary approvals. The Gardiner widening of one lane in each direction between the new Front Street interchange and the Humber River, is the subject of a feasibility study which has identified the need for early reconstruction of bridges at the Humber River. Consequently, this component has been scheduled for completion between 1988 and 1992 at an inflated cost of $41.2 million, while the remainder of the widening would commence in 1991, at an estimated inflated cost of $71.3 million.

5.1.2 Leslie Street Extension/Bayview Avenue Widening

The Leslie Street extension at an estimated inflated cost of $79.7 million (excluding property) essentially consists of three main components:

(i) extension of Leslie Street from Eglinton Avenue to the Bayview Extension south of Nesbit Road;
(ii) widening of Bayview Avenue from 4 to 6 lanes from Leslie Street to the Bloor/Bayview/Don Valley Parkway interchange; and

(iii) reconfiguration of the aforementioned interchange to allow for all movements between Bayview Avenue and Bloor Street.

It should be noted that the proposed improvements noted above do not directly increase road capacity into the Central Area. The issue of widening Bayview south of Gerrard Street has been addressed separately and was approved by Metropolitan Council in early 1988. Metropolitan Council approved an Official Plan amendment for the Leslie Street Extension on July 5, 1988.

5.1.3 Allen Road Extension

The Northwest Metro Transportation Study, recently completed by the Planning Department, concluded that termination of the Allen Road at Eglinton Avenue has resulted in a major bottleneck causing excessive levels of congestion in that area. The recent extension of Black Creek Drive southerly to Weston Road has not led to any measurable relief. An environmental and feasibility study of a basic 4-lane extension to the Allen Road south of Eglinton Avenue had been proposed to be undertaken jointly with the Ministry of Transportation. This extension would not add significantly to road capacity entering the Central Area as it would most likely end north of the CPR tracks at Davenport Road. The extent of any capacity increase would be the result of improvements to the existing north-south roads that cross the rail corridor. Metropolitan Council in early July, 1988 considered the Northwest Metro Transportation Study and did not approve the above noted study of the Allen Road extension.

5.2 Transit Improvements

Although of similar scale and cost, identified transit improvements have generally received higher emphasis than road improvements, for a number of inter-related reasons. Firstly, approximately 75% of peak period inbound trips to the Downtown Core are made by transit (both T.T.C. and GO), indicating the heavy reliance on transit for work travel. This, in turn, suggests the future success of

new transit facilities or services, since no major behavioral change is required. Finally, the general success and relatively low environmental impact of transit facilities has resulted in a high level of political support. For these and other reasons, transportation improvements for the Central Area have traditionally focussed on transit.

5.2.1 Harbourfront L.R.T.

This line, extending from an underground loop at Union Station to Spadina Avenue and Queen's Quay via Bay Street and Queen's Quay, has received all necessary approvals and construction was started in late 1987. The $52 million facility is intended to serve primarily the eastern section of Harbourfront, the Central Bayfront and the southerly portion of the Spadina sub-centre of the Railway Lands. Extensions of the Harbourfront LRT, both west of Spadina Avenue and east of Bay Street, have been proposed with the alignment of the westerly extension currently under study by Metro, T.T.C. and City staff.

5.2.2 Spadina Transit

Originally, the CWTS proposed an extension of the Harbourfront LRT along Spadina Avenue to connect with the Bloor-Danforth subway. However, local concerns with the impact of such a facility have resulted in the establishment of a Consultative Committee and the undertaking of an Alternatives Analysis study which will review a range of services and facilities aimed at serving the Spadina sub-centre of the Railway Lands. Recommendation of a preferred alternative will be considered by Metropolitan Council in June, 1988. It should be noted that any new services for the Spadina Sub-centre, along with the Harbourfront LRT, are designed primarily for downtown circulation and do not increase transit capacity into the Central Area.

5.2.3 Downtown Rapid Transit (DRT) Line

The DRT line was initially identified in the Metro/T.T.C. Rapid Transit Study of 1982, and was proposed for implementation by 1999 as recently as 1985. However, the final Network 2011 report

recommended that no specific priority be assigned the DRT at this time, but rather that it be reviewed, along with other options, every five years. Metro Council has approved an Official Plan amendment for the Sheppard and Eglinton rapid transit lines which makes no reference to the DRT line. In essence, the priority for the DRT steadily decreased from "immediate need" in 1982 to "wait and see" in 1986.

5.2.4 GO Rail Expansion

Over the past several years, expansion of existing GO Rail services has been recommended by various agencies and the Province has committed to extension of Lakeshore East full service to Whitby (1988) and Oshawa (1991); addition of 2 peak period trains on the Milton Line (1988); and extension of Lakeshore West full service to Burlington (1990). A number of other improvements, such as upgrading of Richmond Hill, Georgetown and Stouffville services have been mentioned or studied, but no commitments have been made at this time.

5.2.5 GO/T.T.C. Fare and Service Integration

GO Transit has successfully integrated fares and services with a number of smaller transit properties outside Metro, increasing the local transit share of GO Rail multi-modal trips by offering joint passes and reduced or no local fares. Similar integration with the T.T.C. has been implemented at Union Station, and further short and long term opportunities are currently under review by Provincial, Metropolitan and T.T.C. staff. Key issues, given the current differences in GO and T.T.C. funding arrangements, are the financial policies and subsidy requirements which will have to be addressed. In this regard, Metropolitan Council has adopted a position that any fare integration be reviewed on the basis of no additional cost to either T.T.C. riders or Metro taxpayers.

5.2.6 Bloor-Yonge Subway Station Improvements

The T.T.C. has initated a program to improve passenger facilities

at the Bloor-Yonge station. Elements include expanded stair/escalator access points and removal/relocation of existing barrier walls to allow unrestricted movement. While the modifications will not increase subway capacity, they will improve passenger safety and convenience.

5.2.7 Yonge Subway Service Frequency Increases

A consultant study conducted for the T.T.C. has concluded that short-medium and long term improvements could increase peak hour capacity by making modifications to the signal system, structural changes at the Bloor/Yonge station and by purchasing additional rolling stock. The consultant recommendations are currently under review by T.T.C. staff.

5.3 Local Transportation Improvements

The following improvements have all been or are being studied in some detail and in many cases a firm commitment has been made to their implementation. They are classified as "local" improvements not necessarily due to financial or geographic scale, but because they raise no significant Metropolitan policy issues. The more significant improvements are:

1. Modifications to Gardiner Expressway ramps between Bathurst and Jarvis Streets, as proposed by the City of Toronto;
2. A new local road system for the Railway Lands, and the rebuilding and widening of Spadina Avenue;
3. Modifications to the local road system in the vicinity of Strachan Avenue and Wellington Street, to accommodate the Massey-Ferguson redevelopment.
4. Introduction of a Corridor Traffic Management System (CTMS) in the Lakeshore/Gardiner corridor;
5. Modifications to Union Station, possibly in conjunction with GO/T.T.C. fare integration; and
6. Introduction of traffic management measures such as one-way streets, revised parking prohibitions and shifts in goods delivery hours. Testing of a Bay-Yonge one-way pair operation has been proposed for mid-1988.

6.0 POLICY ISSUES

As noted at the outset, the objective of the current study is to identify what, if any, changes are required to the transportation sections of the Official Plan as they relate to the Central Area. Over the past several years, as various studies have identified the need for specific improvements, the conventional wisdom has become to assume that fundamental changes are required dealing not only with the individual facilities, but with the general approach to the Central Area as well. This assumption is based on the expection that additional rapid transit facilities, if required to serve new growth, will affect the relative development rates in the Central Area and designated Centres. However, the need for changes to the Official Plan can be linked to changes in the environment, and these in turn can be grouped into a number of factors, as are discussed following.

6.1 Employment Growth

The key assumption in the Official Plan regarding Central Area employment growth and transportation capacity is that the system can accommodate a specific incremental growth of 52,000. The problem arises because that increment is pegged to a base (387,700, as estimated in 1976) which now appears to have been substantially overestimated. The estimated increment, when added to the revised 1976 employment base of 350,000, would produce a total future Central Area employment of 402,000, just higher than the 1986 total Central Area employment of 390,144, as counted by the Metropolitan Toronto Employment Survey. Further, the 1987 Central Area employment was about 407,000, or 5,000 more than the level implied by the Official Plan for 2001. As noted previously, the Official Plan does not indicate what residual capacity, if any, may exist on the transportation system serving the Central Area when employment growth of 52,000 has been realized. It does appear that the growth has occured more quickly than envisaged by the Official Plan and, should this growth continue at a

similar rate, it is probable that transportation capacity will be exceeded within the life of the Official Plan if additional improvements are not implemented.

The foregoing discussion of Central Area employment ignores three significant changes in the character of Central Area employment over the past ten to fifteen years:

1. distribution of employment by type is changing, with increases in office and retail jobs, along with substantial declines in the industrial and manufacturing sectors;

2. distribution of employment by area is changing as well with the increasing office and retail jobs clustering near the core and rapid transit facilities; and

3. part-time jobs (a component that is not currently well understood) are increasing, again largely in the office and retail sectors.

In considering the foregoing factors, one is faced with the very possible prospect that, not only has the base employment upon which the statements of the Official Plan are based been revised, but the incremental growth assumed is itself, may no longer be relevant, due to fundamental changes in the character and distribution of Central Area employment. It would then follow that the methods of estimating changes in transportation system usage based on office development require some degree of modification.

There is general consensus that both office space and total employment in the Central Area will increase over time. While detailed projections of employment growth by type and area within the Central Area have been made, these are based on current trends which are not fully understood, and must be considered speculative at this

time. Even if these estimates prove accurate in terms of both level and timing, the relationship between employment and peak period travel, not well understood at present, is probably changing. Recognizing that change will continue, it would be inappropriate to recommend specific improvements to deal with the as yet undetermined impacts of future growth. However, it would be appropriate to undertake further monitoring and analytical studies to both chart and understand these changes, and from those studies develop solutions as specific problems are identified. This process has, in fact, been initiated, as described further in Section 6.4.

6.2 The Distribution of Future Travel Demand

As described in Section 4.2, Central Area travel patterns changed substantially between 1971 and 1981, with a large increase in both the number and percentage of Central Area destined work trips originating outside Metro. This trend is expected to continue in the future with trips from within Metro (but outside the Central Area) declining as the labour force ages and declines. At the same time, short-distance trips within the Central Area will increase as residential intensification continues.

Assuming that the land use projections are reasonably accurate, the clear implication is an increasing reliance on inter-regional transportation facilities, most notably GO Transit. This in turn raises a number of issues of importance to Metro:

- o the provision of GO Transit services is beyond the control of Metro. Routes, schedules and fare structures (including subsidy levels) are to a great extent determined independently of any direct Metro staff or political input or review. While GO use by Metro residents is currently limited to a few specific services (e.g. Lakeshore East line in south-eastern Scarborough), GO/TTC service and fare integration could increase the importance of centrally-oriented GO services for Metro riders;

- the nature of suburban residential development (i.e. low density, curvelinear streets with limited arterial access and high levels of auto ownership) does not promote high transit use. Despite this, GO Rail services have achieved high transit modal splits to the Central Area of 65% - 75% in those corridors directly served by offering a service that is cost and time competitive with auto travel, partly due to high levels of road congestion. Given the limited capacity potential of any reasonable road improvement scenario, even higher marginal transit modal splits will have to be achieved if the travel demands suggested by forecast land use are to be accommodated, which implies necessary improvements in local transit feeder services connecting with GO Rail facilities. Alternatively, other adjustments such as peak-spreading, increased occupancy rates and increased congestion will need to occur to accommodate increased auto travel demand or travel must be foregone;

- continued reliance upon and expansion of the GO Rail system raises larger issues of overall development patterns and densities within the G.T.A. Improved Central Area accessibility will promote low density residential development in outlying areas and dependence on capital-intensive facilities that are efficiently utilized only during peak periods. Substantially improved GO services, by providing access to relatively cheap housing, could thwart any efforts at residential intensification within Metro and in turn exacerbate declining ridership on existing infrastructure, notably the T.T.C. subway system.

- while work trips originating within the Central Area will increase, the absolute numbers are relatively small, particularly for peak-hour travel. Increases in walk-to-work and short distance transit trips can be expected, however, it is unlikely that any major initiatives would be required to accommodate these new trips,

although surface routes and service levels may require adjustment as their function changes.

As noted, a major assumption underlying the projected work trip distribution is that the forecast landuse scenario is reasonable and supportable. However, if sufficient transportation capacity (either road or transit) is not available or congestion increases to unacceptable levels, the effect may be a shift in land use patterns rather than or together with a change in travel characteristics. Similarly, housing intensification within Metro could affect development trends, trip patterns and, ultimately, transportation requirements. While a discussion of the sensitivity of land use projections is beyond the scope of this study, it is a critical element in determining future transportation needs and must be addressed in the context of the overall Official Plan review. New data on this topic is expected to be released by the Research Division of the Planning Department by the end of 1988.

6.3 Urban Structure

A number of key policy issues have been identified in this review. Employment growth appears to be at a faster rate than originally anticipated, with the possibility that two-hour peak period transportation capacity may be exceeded within the life of the Plan, if additional improvements are not implemented. The implications of this trend are increasing congestion, delays and frustration to motorists and transit users as peak period conditions extend over a longer time. The trend in population, labour force and, therefore, trip distribution implies an increasing reliance on GO Rail services, the provision of which is largely beyond the control of Metropolitan Toronto and which raises larger issues of overall development patterns in the Greater Toronto Area. From an ideal planning perspective, two-policy choices appear to be available regarding overall regional development:

(i) accommodation of existing trends and forecasts, which imply increased commuting from the adjacent Regions and an increasing reliance on both GO Rail and the expressway system to serve the growth in inter-regional commuting; or

(ii) restrict Central Area development consistent with the existing capacity of the transportation network.

Recognizing that it is unrealistic to pursue either of the above extreme policy choices, a middle course of action should be supported that strengthens the existing policies of Metropolitan Toronto. These policies attempt to modify the existing trends by increasing the level of intra-regional commuting (i.e. within Metropolitan Toronto) through continued support and promotion of suburban centres as areas of alternative office employment growth. Therefore, the preferred direction with respect to the overall urban structure of Metropolitan Toronto and the Greater Toronto Area would see:

- continued growth and development of the major suburban centres as areas of alternative employment opportunities through the provision of east-west rapid transit services;

- continued growth of residential development within the Central Area to promote short distance work trips between jobs and residences in the Central Area;

- intensification of housing within Metropolitan Toronto generally to take advantage of the existing transportation infrastructures;

- the maximum use of the existing transportation infrastructure through the implementation of transportation system management measures and upgrading of the existing arterial road network; and

- control of the expansion of GO commuter rail services to discourage urban sprawl and long distance work trips.

6.4 The Need for and Timing of Central Area Transportation Improvements

In assessing the need for improved transportation services into the Central Area, one is faced with contradicting signals. Congestion levels, particularly on the road system, have increased substantially in recent years. Yet residual capacity exists, notably on the subway and GO Rail systems. The general concern is that employment will increase substantially in the future, but there are also indications that the nature of both Central Area employment and travel characteristics may be changing, and the impacts on peak period travel are unclear.

While the overall situation is uncertain, there are a number of issues that are clear:

- Road improvements will be limited and are generally well advanced in the planning process. The major improvements will be the Front Street extension and interchange and Gardiner Expressway widening. The Leslie Street extension, coupled with improvements to lower Bayview Avenue, will improve accessibility by providing an alternative route to the Don Valley Parkway, but does not increase overall capacity significantly. Analysis conducted for the Northwest Metro Transportation Study has reviewed the need for extensions of Black Creek Drive and Allen Road. Should either of these facilities be recommended, the need for full environmental assessment would put their implementation well into the future. Consequently, there is a high degree of certainty with respect to the near-term future road system. Official Plan amendments that are necessary to accommodate a specific facility can be brought forward at the time the facility is recommended for implementation.

- Given the limited opportunities for road system capacity improvements, increases in travel must be accommodated primarily on the TTC and GO-Rail systems. As presented

previously, current demographic projections indicate that the vast majority of new trips will logically use GO rather than TTC services; nevertheless, TTC travel could increase in the shorter term. In the case of GO Rail, service improvements are generally incremental and long-term; current commitments include two additional peak-period peak direction trains on the Milton line by late 1988 and extensions of full Lakeshore service to Whitby (1988), Oshawa (1991) and Burlington (1990), which do not increase capacity. While the possibility of full service on Milton and Georgetown and improvements to the Richmond Hill and Stouffville services have been raised, no detailed studies have been done and such improvements, if approved, could be a decade or more into the future.

- The issue of additional TTC rapid transit capacity into the Central Area has been dealt with by Network 2011, which recommended no commitment to a DRT line prior to the first five year review of rapid transit priorities. Since that time, the DRT has effectively dropped even lower in priority and now appears an unlikely prospect within the next twenty years. The need for a DRT line has declined for the following reasons:

  1. a changing demographic pattern which implies a high reliance on inter-regional transportation services in future and a correspondingly high risk to the operational and service effectiveness of a new local rapid transit service;

  2. extremely high cost for limited service utility;

  3. a willingness on the part of the TTC to consider alternative means of increasing Central Area transit capacity, most notably by the possible decrease of Yonge-University-Spadina subway headways.

- A number of initiatives to improve transit access and circulation within the Central Area will be necessary and will require Official Plan amendments. One, the Harbourfront LRT has, in fact, been approved and construction is now underway. The second, to be determined by the Spadina Transit Alternatives Analysis which is currently underway, will require an Official Plan amendment only if it falls within the technical definitions (contained in the Official Plan) of rapid transit or light rail transit. While these improvements are important and necessary, they should not be considered in the same context as major regional improvements, which imply a change in direction for the Official Plan. Because these facilities are intended to improve circulation and distribution within the Central Area and do not increase transit capacity into the Central Area, they are considered to be consistent with the current intention of the Official Plan and the necessary amendments are seen as facility related rather than strategic.

- the Official Plan currently recognizes the need for traffic management studies to be undertaken jointly with the City of Toronto, and Figure 9 - Metropolitan Arterial Roads: Rights-of-way designates the area bounded by the Downtown Cordon, as shown on Exhibit 8, as subject to such future study, which would be directed at determining necessary right-of-way widths in this area. In 1980, the Central Area Traffic Management Study (CATMS) was initiated to address the requirements of the Official Plan but, for a variety of reasons, the recommendations of that study have not been adopted by either Metropolitan or City of Toronto Councils and some may no longer be feasible due to developments which have proceeded in the past few years. Nevertheless, Metro staff have recognized both the limited opportunities to expand the road system and the need for a range of operational improvements as additional major development

proposals come forward. It is, therefore, the intention of Metro staff to pursue joint studies with City of Toronto staff which will examine the function and operation of the Central Area road system, including:

1. the possible implementation of additional one-way streets and the need for assumption of current City streets by Metro;

2. extension of peak-period parking and stopping prohibitions; and

3. restriction of delivery vehicles to specified off-peak hours.

In addition, Metro staff have proposed a review of private sector contributions to transportation improvements through both development levies and participation in the funding of specific transportation facilities which directly benefit identified developments. The results of these various studies, and the Official Plan implications are obviously not known at this time; it is assumed the specific amendments, if and when required, will be brought forward as the studies are completed.

In summary, necessary road improvements are well-defined and the timing can be accurately established; Official Plan amendments for these facilities can proceed in the near future. Regarding transit improvements, it appears that new TTC rapid transit facilities are not required in the immediate future and can be adequately considered as part of the Network 2011 five-year review process. GO Rail improvements are however, a considerably different proposition. The timing of improvements is uncertain for a variety of reasons, one being that Metro has little control over GO Transit or its planning. In addition, the urban development implications of expanded GO Transit

services have not been addressed in a regional sense and require further examination.

Expansion of the GO Rail system will be needed to serve additional Central Area development, but should take place incrementally over an extended period of time. Improvements to the rail services to the north, northeast and northwest are required; however, the length over which improvements are to be made should be minimized so as not to encourage wide spread urban sprawl and development of exclusive dormitory communities. Finally, staff have proposed studies to review the function and operation of the Central Area road system and private sector contributions to transportation improvements; the Official Plan implications of these studies are yet to be determined.

6.5 Monitoring the Central Area

Over the past several years, a number of studies dealing with the transportation needs of the Central Area have been completed, and various proposed improvements requiring Official Plan amendments have been tabled. Yet only two amendments related to Central Area transportation, for the Harbourfront LRT and the lower Bay Street right-of-way widening have been initiated since the 1980 adoption of the Official Plan. The reason is an implicit recognition of the uncertainty regarding Central Area employment growth and travel demand. The significant capital and on-going operating costs of potential transportation, notably transit improvements, coupled with uncertainty regarding growth implies a high degree of risk associated with most major transit investments, and an understandable reluctance to commit to major improvements.

This report has documented the changes in employment and labour force characteristics and distribution between 1971 and 1986 and the expected further changes into the future. Similarly, the relationship

between employment and transportation has been discussed and the possible future changes highlighted. Again, the uncertainty with respect to both level and timing is apparent.

Certain transportation improvements have been identified as necessary and are now proceeding through implementation (e.g. GO Rail expansion) or planning (e.g. Front Street and Leslie Street extensions). The need for other improvements, such as additional T.T.C. rapid transit or further GO Rail improvements is less clear, particularly with respect to timing. Numerous studies have recommended the establishment of a comprehensive monitoring program to track employment and transportation trends. Such monitoring is, in fact, prescribed by Section 6.C - System Development of the Official Plan, which states that transportation system expansion will be considered only after detailed analysis which shall include:

> "a program to monitor continually the performance of the system in association with land use change, in order to provide information for determining needs and priorities and for project planning;"

The Central Area Monitoring Program was initiated by the Metropolitan Planning Department in late 1985, and the first report, for 1986, was published in September, 1987, the second for 1987, was published in June, 1988. The program is being reviewed and expanded and a variety of additions and improvements have been identified and future reports will provide the basis for determining the extent and timing of necessary transportation improvements. The executive summary of the 1986 Central Area Monitoring Program report is included in Appendix A.

7.0 SUGGESTED AMENDMENTS TO THE OFFICIAL PLAN

The Official Plan, although containing a range of specific and detailed provisions and prescriptions is primarily a strategic instrument which outlines the broad policies to be pursued in defining the form and function of the Metropolitan Toronto urban structure. This paper is premised on the assumption that the current review has not identified any trends or developments that question the basic strategy of the Official Plan regarding the Central Area, that is, to sustain the growth of the Central Area as the business, cultural, governmental, recreational and management centre of the Metropolitan Region, while promoting the continued development of alternative opportunities in suburban sub-centres. Consequently, no fundamental revision of the Plan is proposed at this time.

As noted in this report, the projected level of total employment in the Central Area for 2001 (387,700) in the Official Plan, was based on 1976 employment which was overestimated by approximately 38,000 employees. This raises questions of whether continued Central Area growth is "compatible with the capacity and level of transportation facilities described in Section 6", particularly when Section 6.2.a states that Council "shall not support construction of additional rapid transit lines into the Central Area". The issue may be of little direct significance, however, since this report has concluded, that there appears to be little prospect of a new TTC rapid transit line into the Central Area in the foreseeable future, despite continued employment growth. Certainly, the next five-year review of the Official Plan will provide ample opportunity to address this need, in conjunction with the first Network 2011 five-year review of rapid transit priorities within Metro to be conducted in 1991.

As noted earlier, the continuation of current population and labour force trends implies an increased reliance on the GO Transit

commuter rail system. If these services are upgraded without recognition of the potential impact that these actions may have on overall regional development, the actions may only serve to reinforce the current trends. Official Plan transportation policies with respect to the Central Area must recognize this fact and be structured to promote office employment growth in the regional centres and limit the extent and growth of the GO commuter rail system. **Therefore, it is suggested that:**

1. **the specific prohibition against new rapid transit serving the Central Area be retained in order to reinforce the policy direction of the Official Plan with respect to the continued development and growth of the suburban Metropolitan Centres;**

2. **Section 6.D.3 regarding GO Transit commuter rail facilities be revised to reflect existing facilities and the possibility of service upgrading, based on appropriate analysis and review. In recognition of the Plan's overall policy with respect to the urban structure for Metropolitan Toronto, Metropolitan Council should support GO commuter rail improvements that sustain but not promote growth in the Central Area. Therefore, improvements should be based on an incremental approach in response to demand and the length of each line over which improvements are to be made should be minimized so as not to encourage wide-spread urban sprawl and development of exclusively dormitory communities;**

3. **The specific Metropolitan role in analysis, review and approval of GO Transit plans and programs should be discussed with the Provincial authorities, and then strengthened and delineated in the Official Plan;**

The provisions of Section 6.C - System Development, coupled with the Provincial Environmental Assessment Act, provide for full analysis, public debate and political review of any new rapid transit facilities and provide adequate protection against precipitous implementation of new Central Area facilities. Nevertheless, in order to clarify Council's intent, **it is suggested that:**

4. **the provisions of Section 6.C of the Official Plan referring to the analyses to be conducted for system expansion be referenced in Section 6.B.2, which refers to transportation services to support employment growth in the Central Area;** and

5. **the incremental upgrading of existing services and facilities, and the introduction of low cost measures such as new surface services, transportation system management measures, etc. be emphasized (in addition to the implementation of the Front Street, Gardiner Expressway and Leslie Street/Bayview Avenue improvements and the Yonge subway headway reduction improvements) in improving Central Area transportation system performance.**

Other amendments to the plan are generally technical or facility related in nature and should proceed at this time. **It is therefore suggested that:**

6. **Appropriate amendments to Figure 8 - Road Network: 2011 and Figure 9 - Metropolitan Arterial Roads: Rights-of-Way be prepared to show the Front Street extension and Gardiner Expressway interchange, such proposed amendments to be brought forward when the environmental and feasibility studies for these facilities are considered.**

It has been noted that a variety of operational and system management initiatives are to be investigated, as currently prescribed by the Official Plan. Staff have recognized the need to work closely with City of Toronto staff to assess both the local and regional impacts of major development proposals now coming forward. The issues to be examined will include:

1. introduction of additional one-way streets in the Central Area, and their possible assumption by Metro;
2. temporal and spatial extension of peak-period parking prohibitions;
3. transit priority measures;
4. measures to increase vehicle occupancy such as high occupancy vehicle lanes;
5. restriction of delivery vehicles to off-peak hours; and
6. developer contributions to transportation improvements, both for specific facilities and through a general development levy.

If, as a result of these studies amendments to the Official Plan are proposed, the specific amendment can be brought forward at that time. While the need to undertake these studies may suggest that the shaded area on Figure No.9 of the Plan should be retained, the Central Area Traffic Management Study conducted jointly with the City of Toronto was explicitly undertaken to satisfy the "Location for Further Studies" note referenced on Figure No.9. It should be noted, however, that the only currently remaining outstanding road right-of-way issues are the widening of Jarvis Street between Lake Shore Boulevard and Queen Street and the widening of York Street south of Front Street, and proposed amendments for these road sections are forthcoming. To remove ambiguity with respect to road rights-of-way in the Central Area, the shaded area should be removed from the above Figure. Any further amendments can be brought forward in the future if it is determined that a specific road's right-of-way should be changed. **It is therefore suggested that:**

7. **both the shaded area and footnote headed "Locations Subject to Further Study" on Figure 9: Metropolitan Arterial Roads: Rights-of-Way be deleted.**

Finally, as noted previously, structural and distributional changes in Central Area employment are becoming increasingly important in assessing transportation implications, particularly with respect to residual system capacity. While these changes are now being monitored, there are currently no policies whereby the differential transportation impacts of specific development proposals can be addressed in the context of the Official Plan, particularly when increases in density are requested. Recognizing that the regional road system serving the Central Area is operating virtually at capacity, commercial developments that are strategically located close to the rapid transit system and which also provide for new residential development have the least impact on the regional road network. Therefore policies should be developed that specifically indicate that the site's proximity to the rapid transit system is the most important criterion in assessing an application for extra commercial density in the Central Area and that Metropolitan Toronto would not support major commercial development located in areas not well served by the rapid transit system. For those applications well located with respect to the rapid transit system, Metropolitan support would be based on a number of additional criteria, which would include; the ability of the rapid transit system to accommodate the additional demand, the ability of the local road network to adequately serve the development and the concurrent provision of additional residential development within the Central Area. With such policies included in the Official Plan, Metro would have a better basis upon which to comment on and, if necessary, to sustain objections to major development proposals.

At this time it would appear that the current rate of office space absorption in the Central Area can be accommodated for 6-10 years

depending upon the extent to which the residual capacity on the transit system can be utilized and whether increases in the "Floor Space per Worker" ratio are realized. Obviously a number of other factors can also influence this time frame and the Central Area Monitoring Program must be heavily relied upon with respect to identifying the need for any further actions to either increase capacity to the Central Area or control future development activity. Clearly, the lead time for such actions can be significant and it will be imperative that appropriate studies be initiated immediately should the monitoring program identify the emergence of major problems within a 3-5 year time frame.

It must also be recognized that, if the transportation improvements for the Central Area that are currently under study (Front Street extension, Gardiner widening and increased frequency on the Yonge Subway) are not approved for implementation, then consideration will have to be given to introducing additional controls on the rate and/or the amount of Central Area development, commensurate with the capacity of the transportation system. **It is therefore suggested that:**

8. **in order to minimize the impacts of new development on the road system, a section in the Official Plan be included which clearly outlines that Metropolitan approval of applications for extra commercial density in the Central Area will be based firstly on the proximity of the development to the rapid transit system, and secondly on various other criteria, including the ability of the rapid transit system to accommodate a high percentage of the additional travel demand, the ability of the local road network to serve the development and the concurrent provision of additional residential development within the Central Area; and**

9. a section be included in the Official Plan which clearly states that future Metropolitan Council action with respect to additional transportation infrastructure to serve the Central Area or with respect to the level of development considered appropriate for the Central Area, will be largely based upon the results of the Central Area Monitoring Program.

APPENDIX A.
1986 CENTRAL AREA MONITORING PROGRAM REPORT
EXECUTIVE SUMMARY

This is the first of a series of annual reports to be produced as part of a joint program of the City of Toronto, Metropolitan Toronto and the Toronto Transit Commission, established to monitor both transportation and land use characteristics in the Central Area. The existing Metropolitan and City transportation and land use data collection programs are fundamental elements of the Central Area Monitoring Program; they are supplemented by additional surveys undertaken for the Program or for other studies in the Toronto Central Area. The City of Toronto 1986 Quinquennial Review of the Central Area Plan has provided valuable background data for this report. The Ministry of Transportation and Communications has provided subsidy funds for some elements of the Program, while GO Transit has contributed ridership data.

The main objective of this report is to document the current (1986) status of, and recent trends in, key indicators for the Central Area, including transportation system usage, office floor space and vacancy rates, employment and population. The longer term objectives of the Program are to assist in the identification of causal relationships between the monitored variables in order to better estimate the transportation impacts of proposed major office developments and to identify the need and timing for related transportation system improvements.

To facilitate comparison of the transportation and land use data, both are summarized by common areas enclosed by cordons as defined for the Metro Cordon Count Program. The Central Area itself is bounded by Bathurst Street on the west, the CP North Toronto rail line on the north, and Bayview Avenue on the east.

Analysis of employment data collected in the Metro Employment Survey since 1981 shows a general upward trend in full-time office employment in the Central Area since the recession of 1982, while

full-time employment has declined in other categories such as retail and manufacturing. Part-time employment, however, has grown in most categories since the data first became available in 1983. Total employment (full-time plus part-time) has shown a net increase in all categories except manufacturing. Total Central Area employment grew by 15,500 full-time and 17,000 part-time jobs between 1983 and 1986, mainly in the Yonge Street/University Avenue corridor between Front Street and Bloor Street. As a result of the loss of jobs in the 1982 recession, net growth in full-time employment from 1981 to 1986 was only 8,000; part-time data is not available for 1981. Part-time represents under 4% of total office employment, but is about 25% of service and 33% of retail employment in 1986.

Population as recorded by the Provincial assessors has also shown an upward trend in the Central Area, growing by close to 8,000 between 1981 and 1986, in contrast to declines in many other parts of Metropolitan Toronto. Substantial new housing has been constructed in areas such as the St. Lawrence community, the Central Waterfront and the Bay Street Corridor. According to the 1981 Census, 58% of the population of the Central Area were employed, and 68% of those held jobs in the Central Area. If it is assumed that the above percentages apply to the population increase, this implies that roughly 3,200 new Central Area jobs were taken by Central Area residents, thus reducing the growth in in-commuting that would otherwise occur.

The report summarizes office space characteristics in the Central Area based on various surveys undertaken by and for the City of Toronto. The annual rate of growth, rate of absorption, vacancy rate and rents for office space have varied considerably over recent years due to swings in the market and the economy, but an annual average of 125,000 square metres of new Central Area office space have been absorbed into the market since 1981, compared to 150,000 square metres per year from 1976 to 1981. Recent data indicates a healthy market for new office

space in the Central Area, as well as a relatively large supply in the construction, approval and proposal stages.

Major office developments in the construction or approval stages within the Central Area are summarized; these include Scotia Plaza, Waterpark Place, Eaton Centre Phase II, World Trade Centre and B.C.E. Place. A total of 308,000 square metres of office space was under construction at the beginning of 1987, and a further 914,000 square metres were in various phases of the approval process, while several large developments were still at the proposal stage.

Average floor space per worker ratios, which link the amount of floor space to the number of employees, and hence work trips, showed an increase from about 19 to 25 square metres per worker based on various surveys between 1960 and 1980; a further modest increase to 26 square metres was recorded between 1980 and 1985.

Vehicle and person counts from the Metro Cordon Count program between 1975 and 1986 are summarized by cordon. These one-day manual counts are subject to random variations due to weather, accidents, construction, counter accuracy, etc. The counts at the Central Area Cordon show 1981 as a peak year for both transit and total person volumes in the 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. peak periods (peak direction). Transit travel (excluding GO Rail) declined in 1983 and again in 1985; the 1986 counts indicate a recovery to the 1981 level in the a.m. peak period, but a further drop, to 8,300 below the 1981 level, in the p.m. peak period. The auto person travel peaked in 1979, falling by about 10% in 1981, then rising in 1983 and 1985; again, the 1986 counts show an increase to close to the 1979 level in the a.m. but a further decrease in the p.m. peak period. The 1987 counts, when available, should establish whether or not this is a temporary phenomenon.

On an all-day basis (7:00 a.m. to 7:00 p.m., both directions), total person trips have shown a steady increase from year to year, although there has been fluctuation in individual modes.

The 1986 counts for 7:00 to 9:00 a.m. indicate that 57% of person trips entering the Central Area were on transit, 34% in autos and 9% on GO Rail. Compared to 1981, auto and GO Rail percentages have increased slightly, while the transit percentage has dropped.

Auto vehicle counts show a similar pattern to auto persons; however, the growth in vehicles is compounded by a steady downward trend in average auto occupancy. Trucks and transit vehicles represent a fairly constant proportion of total vehicle traffic: about 11% in peak periods and 15% in the 12-hour period.

T.T.C. peak point, a.m. peak hour inbound subway volumes based on monthly counts show 1981 as a peak year on the Yonge subway south of Bloor station, with a volume in excess of the practical capacity of 33,600 passengers per hour. After declining in 1982 and 1983, the volume recovered by 1986 to 31,800 or 95% of capacity. Peak point volumes on the Bloor line, and on the Yonge line north of Bloor, were generally lower in 1986 than peak levels recorded between 1980 and 1982, and between 75% and 85% of capacity. The Spadina/University line showed fairly stable ridership; the 1986 volume was 73% of capacity south of Bloor Street, and 45% of capacity north of Bloor Street.

Surface transit ridership into the Central Area showed a decline between 1981 and 1985, with some recovery recorded in 1986. Surface transit serves less than 2% of total person trips to the Central Area.

GO Transit ridership into Union Station has shown a steady upward trend from 1981 to 1985, due in part to the addition of lines to Milton, Bradford and Stouffville; total ridership levelled off in 1986. The highest train frequency and heaviest ridership are on the Lakeshore West line.

The highest rate of growth has been on the Milton line, to which two trains are to be added in 1988.

Parking surveys show that spaces available to the public in the Downtown Core increased by 1,800 between 1980 and 1986, while in the area to the south, including the Central Waterfront, parking spaces increased by 5,000.

Transportation improvements currently under study which would improve access to the Central Area include the Gardiner Expressway widening and Front Street extension, Leslie Street extension and Bayview Avenue widening, expansion of GO Rail service and GO/T.T.C. fare and service integration. The T.T.C. has launched a study of means to reduce headways and relieve congestion on the Yonge subway line; in the shorter term, spare capacity is available on the University line, and surface transit contingency measures could be implemented at short notice should Yonge line overcrowding reach unacceptable levels. A study of pedestrian movements and future requirements in the Union Station area is in progress under the auspices of the Railway Lands Steering Group.

The report assesses the 1986 Program, and identifies some deficiencies and proposed improvements for future years. Additional data collection is proposed to facilitate analysis of through travel at the Central Area and inner cordons. More detailed consideration of road traffic flows, including calculation of capacity and level of service on individual facilities, is also proposed, along with identification of specific congestion points. More detailed analysis of cordon counts to identify peak spreading is recommended.

The 1987 C.A.M.P. report will include summaries of two recent surveys: the 1986 City of Toronto travel survey of Central Area residents, and a survey of part-time employees in the Central Area undertaken in conjunction with the 1987 Metro Employment Survey.

Finally, two major new sources of data that should be available in 1988 are the 1986 Census place-of-work Survey and the Transportation Tomorrow Survey. The Census data was last collected in 1981, and provides valuable information on home-to-work linkages, including the residential orientation of Central Area employees. The Transportation Tomorrow Survey is a comprehensive travel survey of 60,000 households across the Greater Toronto Area undertaken in Fall, 1986; it will provide detailed information on person travel by purpose, mode, time of day and orientation. This is the first survey of this magnitude since 1964.

INFORMATION TO THE READER

This report is one of a series of background and proposal studies undertaken in the general area of "transportation" as part of the Metropolitan Plan Review.

All members of the community are invited to comment on the matters presented. It is hoped that individuals and organizations with particular expertise on items raised here, will convey their conclusions, concerns and recommendations. These comments will be considered and reported in the preparation of policy recommendations which will follow.

Submissions should be sent to:

Metropolitan Toronto Planning Department
Transportation Division
East Tower, 11th Floor
City Hall
Toronto, Ontario
M5H 2N1

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The "Metropolitan Plan Review" is a program to review the Official Plan For The Urban Structure: Metropolitan Toronto. The program was adopted by Metropolitan Council in March of 1986 and is available in printed form as "Report No. 1: Program, Metropolitan Plan Review". Copies are available from the above address.

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